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SUPRAPUBIC CYSTOTOMY.

ITS TECHNIQUE ILLUSTRATED BY ANATOMICAL PREPARATIONS.¹

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THE revival of suprapubic cystotomy awakes great interest among surgeons throughout the civilized world. In former years the high operation was reserved for large calculi which could not be removed by any of the perineal operations. The rate of mortality was so high that the operation was considered justifiable only in extreme cases. At the present time, through the influence of the writings and demonstrations of Garson and Petersen, suprapubic cystotomy has become a recognized operation for the removal of calculi of all sizes, and of all descriptions, and under all conditions.

In addition to the removal of stone, the high operation has opened up a new field to the practical surgeon. Vesical tumors and ruptures of the bladder are now operated upon where heretofore no operation was performed. This great change in operative procedure has been brought about by anatomical demonstrations and by experimental work upon the cadaver. The results of these experiments have proved the safety of exploration of the bladder by the *sectio alta*. It is interesting to observe in this connection the different stages through which the operation has passed, from the earliest recorded dates down to the present time.

In studying the history of the operation in chronological order, one is forcibly impressed with the fact that the present complete and perfect method of performing epicystotomy is not due to the entire work of any individual. The operation as it is now performed, according to the technique recommended by Garson and Petersen, has been the result of a gradual growth and steady development. The work of the anatomist has been supplemented by the surgeon. Practical applications have been made of knowledge obtained by experimental work. Suprapubic cystotomy of the present century differs from the suprapubic cystotomy of the sixteenth century only in the perfection and completion of the details. The same general principles were formerly recognized, as I shall endeavor to point out, and it has been through the improvement of these different methods that the present complete operation has been perfected. In other words, improvements in the technique, rather than the introduction of any new principle, have given us this eminently satisfac-

tory operation. I shall endeavor to prove that the suprapubic operation of to-day owes its parentage to the original operation.

In reading the early description of this operation, it is obvious that the great dangers were fully recognized, but the exact way in which to avert these dangers was not understood. The prevention of injury to the peritoneum and the avoidance of urinary infiltration were aimed at in the early operations, but the means to bring about immunity from these special dangers were crude and undeveloped. In the modern high operation the peritoneum is protected and urinary infiltration avoided by forcing the bladder upward by conjoined distention of the rectum and bladder. The additional safeguard to the danger of urinary infiltration is offered by the employment of an antiseptic fluid for distending the bladder, instead of ordinary fluid. The principle of lifting the bladder upward was crudely demonstrated by the surgeon introducing his finger into the rectum and pushing up the bladder. The distention of the bladder was made by injecting fluid into the viscus. Hilanus, in the seventeenth century, recommended the use of the finger in the rectum for the purpose of lifting up the bladder. The accomplishment of this object is now secured by the use of the colpeuryter in the rectum and by the injection of an antiseptic fluid into the bladder. Douglas, Cheselden, and other surgeons practised a certain amount of vesical distention. The principle recognized in the old and the new operation is identical, but the means employed to carry out the principle are widely different. Our forefathers have handed down to us a principle in the high operation which they fully recognized, and which they tried to carry into practice. They were unable to meet practically all the emergencies of the case. Our contemporaries have beautifully perfected and carried into execution the same principle by a method which to-day enables the surgeon to operate with comparative ease and safety.

A brief historical sketch of the suprapubic operation is pertinent, in order to appreciate the important changes through which this operation has passed. There is no authentic description of the suprapubic method until it was performed by Pierre Franco in the year 1561. Franco performed the operation upon a boy, but did not commend it to the profession. Rousset, in 1581, wrote a careful description of the operation, and highly commended it to the profession. Rousset's paper deals with the operation from a theoretical point of view, and King Henry VIII. promised him several criminals for experimental work in order to demonstrate the operation in a practical way. The king died, and Rousset was unable to prove the value of his suggestion by any demonstration upon the live human body. The operation now fell into disuse until 1635, when

¹ Read before the American Surgical Association May 11, 1887.

Mercier advocated it in a thesis before the Faculty of Medicine in Paris. Bonnet performed the operation with success in 1681 at the Hotel Dieu. Proby, in 1694, explored the bladder by the high operation for the removal either of a calculus or a foreign body. Historians do not agree in their accounts as to the object of the operation. Such is the brief historical sketch of this formidable operation until John Douglas, of London, reported four successful cases in 1723. Cheselden, in this same year, published a paper upon the operation, and afterward became its great champion. In 1727 Douglas had performed the operation nine times, with but one death; and Cheselden six times, with but one death. Thornhill had twelve cases, and only two of them died. McGill had five cases.

At this epoch, when the results were comparatively brilliant, the introduction of the infrapubic operation caused the suprapubic operation to fall into disrepute; not on account of its failures, but owing to the great *éclat* with which the perineal operations were received. Cheselden improved and developed the perineal method of the monk Frère Jacques, who began his operations in 1695, and of Rau, the Holland surgeon, and Cheselden then became the champion of the perineal operation, as he had been of the high operation. The suprapubic method was but little practised until Frère Comes revived the operation, and in 1779 published a description of his own method of performing suprapubic lithotomy. He made an opening in the membranous portion of the urethra, through the perineum (*boutonnière*), for the purpose of introducing a sound with a stylet (*sonde à dard*) in order to pierce the bladder just behind the *symphysis pubis*.

Since the time of Frère Comes the suprapubic operation has been seldom employed, until the introduction and practical application of Garson's and Petersen's experiments. From its earliest history to 1851 Gunther could only collect 260 cases. From 1850 to 1879 there were but few cases reported. From 1879 to the present time the suprapubic operation has been performed by many surgeons, and with such uniform success as to attract the undivided attention of surgeons throughout the civilized world. Reports of the brilliant success which has attended this modified suprapubic operation come pouring in from every land, and the time has now arrived when the shackles which have hitherto trammelled this operation shall be thrown aside and the results critically examined in an impartial and honest spirit.

The prophetic words of Dr. Roberts, uttered at a former meeting of this distinguished Association, in which he stated "that within ten years the suprapubic operation will be the operation adopted for all cases of stone that are not treated by Bigelow's operation," are now almost realized. I would venture to remark that the time is not far distant when there will be but practically two operations for stone in the bladder, the suprapubic lithotomy and litholapaxy. If future experience demonstrates that a return of calculus occurs in a fair percentage of the cases after lithotomy from débris left behind,

and that the mortality of the suprapubic is reduced to a figure equal to or less than perineal lithotomy, then suprapubic lithotomy, with its special advantages, will be the recognized operation of the day. If it can be shown that the mortality in the suprapubic operation is due in great part to causes which may be prevented in these days of antiseptic surgery, there is no doubt as to the future of the operation. It is simple in its technique, safe in its execution, radical in its results, free from injury to the reproductive organs, curative in its application, and finally brilliant in its statistics. With all these advantages time will soon determine the place which this operation is destined to take among the recognized surgical operations. On the other hand, the many and serious accidents which follow the lateral operation are avoided.

The technique of the operation of opening the bladder by the suprapubic method is worthy of consideration. A few days previous to the operation the patient can be put upon a milk diet, and the day previous to the operation the bowels should be freely moved by a dose of castor-oil, and the morning of the operation an enema should be given, so as to empty the rectum for the introduction of the rubber bag. The hair should be shaved from the pubes and the parts should be thoroughly washed and scrubbed and irrigated with a solution of bichloride of mercury or carbolic acid. This ablation should be repeated at the time of the operation. The patient being fully under the influence of ether is prepared for the operation. The surgeon should first introduce the India-rubber bag into the rectum. The bag should be oiled and should be carried well up the rectum so as to be above the internal sphincter. Into the rubber bag are injected, slowly, twelve ounces of warm water; at least I would recommend this quantity as the standard, and from it the amount can be slightly increased or diminished according to individual circumstances. Instead of water, air can be used to inflate the bag, as suggested first by Milliot in 1875, at Lyons; but the water for obvious reasons is preferable. If the patient is a boy, instead of an adult, less than twelve ounces of warm water must be injected. The surgeon should bear in mind the danger of rupture of the rectum, especially in elderly people and young boys, and exercise judgment in regard to the proper quantity of water to be injected in any given case. Serious mischief has followed the careless use of the rubber bag during dilatation of the rectum. In one case, where eighteen ounces were used, the rectum was lacerated.

The next step in the preparation of the pelvic viscera for the suprapubic operation is the distention of the bladder. Here again the surgeon must be very cautious lest he inject too great a quantity of water. A silver catheter should be passed and all the urine drawn, and then into the empty bladder about half the quantity of water should be carefully injected that was used to distend the rectum. The quantity should be about six ounces; at least this amount might be taken as a safe standard and variations made according to individual circumstances. The liquid should be antiseptic, and the best is

Thiersch's solution, which contains boro-salicylic acid. The solution should be slowly injected and the surgeon should notice the ascent of the bladder above the pubes. He should also observe the amount of resistance offered to his hand during the distention of the bladder. The same caution here is advised as during the dilatation of the rectum; because any undue force might rupture the bladder, as has happened in several experiments. An India-rubber tubing can be passed around the penis after the catheter has been removed to prevent the escape of the antiseptic fluid which has just been injected for the purpose of distending the bladder. If the assistant's finger is placed over the open mouth of the silver catheter, or, better, a small plug into the end of the catheter, the escape of the fluid will be prevented, and the silver catheter will also serve as a guide to cut upon when the bladder is exposed. This use of the catheter avoids the necessity of withdrawing the instrument and of reintroducing another into the bladder to serve as a guide to cut upon after the viscus is exposed in the wound. The distention of the bladder after dilatation of the rectum increases the distance nearly three inches between the symphysis pubis and the anterior cul-de-sac or pubo-vesical fold of the peritoneum. The membranous and prostatic portions of the urethra are stretched, as has been shown by Sir Henry Thompson.

The patient being placed upon his back with his pelvis elevated so as to cause the abdominal viscera to gravitate toward the diaphragm, is now ready for the operation. The surgeon stands on the left side of the patient and makes an incision three to four inches in length from below, beginning at the pubes and extending upward exactly in the median line of the body. The skin, fasciae, and cellular tissue having been divided, the linea alba is now exposed. The surgeon cuts along the raphe upon a grooved director between the pyramidalis and recti muscles, dividing also the transversalis fasciae. It sometimes happens that the pyramidalis muscle is exposed by cutting the sheath of the rectus instead of going exactly through the linea alba, and the operator must remember that there is no posterior sheath to the pyramidalis but only the transversalis fascia. The fascia must now be carefully divided and the surgeon next exposes a small space filled with fat and loose connective tissue. Before disturbing this tissue a retractor can be placed in the wound, and this retractor, which is made like an eye-speculum, holds the edges of the wound apart and enables the surgeon to command a good view of the parts and to work with greater facility. The use of the retractor suggested itself to me by its employment in the operation for tracheotomy, where I have found the eye-speculum of great help in holding open the wound while making the deep incisions in order to open the trachea.

The fingers of the surgeon should now be introduced into the wound where he can feel the distended bladder. The loose connective and fatty tissue overlying the bladder should be carefully separated with the handle of the scalpel, then the upper surface of the bladder is brought fully into view with its veins and muscular fasciculi showing

on the surface. The surgeon should carefully avoid tearing up the cellulo adipose connective tissue between the pubes and the neck of the bladder, as this might afford an opportunity for urinary infiltration. The point of the silver catheter can be felt within the bladder upon its anterior wall, and this can be relied upon as a guide.

If any uncertainty exists as to whether the peritoneum is out of danger, the surgeon should examine to see if there are two sliding surfaces lying over the beak of the catheter, and if there is a distinct transverse raphe over the summit of the bladder. If only the wall of the bladder is present the surgeon can seize the viscus with two delicate tenacula, and having observed that all hemorrhage and oozing have ceased, open the bladder between the two tenacula and over the point of the catheter.

The walls of the bladder, especially the mucous membrane, are often very much hypertrophied, as a result of the irritation from the stone. The small opening in the bladder is now enlarged by a probe-pointed bistoury in the direction downward toward the symphysis pubis; but never below toward the neck of the bladder and urethra. This last incision would be fraught with great danger. If the object of the operation is the removal of a tumor requiring a free exposure of the interior of the bladder, a stitch is taken in the bladder wall on each side of the incision, and the wound held apart by the suture. The threads also prevent the dipping down of the bladder after the fluid has escaped. The index finger, first dipped into a warm antiseptic solution, is now carried into the bladder and the stone felt, and with the assistance of the other index finger carefully lifted out of the bladder. Instead of the fingers the lithotomy forceps can be employed. If the stone is very large it can be crushed before removal. If there is any difficulty in seizing and removing the calculus, the rubber bag can be emptied and removed and the index finger of the assistant introduced into the rectum and the stone pushed upward so that the surgeon can easily grasp it.

The bladder can now be thoroughly washed out and a soft flexible rubber catheter introduced through the urethra for perineal drainage. The catheter must be removed in forty-eight hours, or its presence will excite a traumatic urethritis. This complication occurred in a case last winter, in which I left the catheter in the bladder too long. An interesting clinical fact in connection with this case was the certainty of the diagnosis as to the traumatic and not specific origin of the discharge. Dr. Seymour Houghton, House Surgeon in Bellevue Hospital, examined very carefully the pus in the Carnegie laboratory, under the microscope for the presence of Neisser's gonococci; but the staining failed after many attempts to show the special germ of this disease. I have seen a boy of ten years and a girl of eight years and also a boy of six years, all affected with gonorrhœa. The first two patients denied any knowledge as to the origin of the trouble; but when the gonococci were found and they were directly charged with it, they confessed. This complication of a traumatic urethritis serves as an important lesson to remind the surgeon not to leave

the catheter in over two days. The catheter in this case was left in four or six days, but was aseptically clean. It was a desire to incur no risks of infiltration on account of the unusual size of the wound in the bladder that induced me to allow the catheter to remain longer than it was necessary.

In this connection might be mentioned the subject of perineal drainage after the suprapubic operation. Some surgeons provide drainage through the perineum by making an opening to the membranous portion of the urethra (the boutonnière) for the purpose of introducing a drainage tube into the bladder by this opening. This seems an unnecessary procedure, for the urethra with a rubber catheter introduced into it, will provide a natural drainage without incurring all the risks incident to wounding the perineum and urethra. Such a procedure exposes the patient to an additional danger of urinary infiltration, and to the danger of the formation of a traumatic stricture and to hemorrhage; and possibly to additional danger of septic infection. The urethra is the natural channel through which to drain, and the opening above can also be used for antiseptic siphon drainage and irrigation, as suggested by Sir Joseph Lister. Hence the perineal incision is unnecessary; besides, it adds the mortality of the median operation to that of the suprapubic. The very object of the high operation is defeated when a perineal wound is made.

The patient should lie with his shoulders elevated, or upon his side, and in this way better drainage is thus secured. Trendelenburg recommends the abdominal position for drainage after the operation. When this is practical it is a most excellent method to establish perfect drainage.

Another question in the technique of the operation is the management of the wound in the bladder. Here an honest diversity of opinion exists among surgeons, and it is an important point for discussion in connection with the high operation. From a careful research into the meagre literature of the suprapubic operation in its modified form, and also from a limited practical experience, I feel convinced that the bladder wound in the majority of cases should be left open. If the bladder in an adult is sewed the wound is most likely to reopen on account of the pathological condition of the bladder wall and the mucous membrane. In chronic cystitis there is thickening of the bladder wall and alteration in the mucous membrane. A failure to secure primary union is quite likely, and if the wound reopens the dangers of infiltration of urine and septicæmia are greatly increased. In twenty-five cases collected by Schmitz with a view to throwing light upon this point six of the patients died, which gives a mortality of twenty-four per cent., and in only four cases did primary intention follow. If the wound in the bladder is stitched a natural provision for drainage is sacrificed, and on account of the unhealthy condition of the mucous membrane from a chronic cystitis accompanied by thickening of the entire bladder wall the wound is not likely to heal by primary intention. The wound opens and sloughs occur and the result is extremely unsatisfactory.

While condemning the practice of suturing the bladder wound after removal of a calculus, the same plan is not to be followed in certain other conditions. In rupture of the bladder, for example, the wound should be sewed, but here the conditions of the mucous membrane and the walls of the bladder are altogether different. Primary intention is more likely to be secured in such a case where it would be useless to try under other conditions. If the bladder wound after a high operation for stone is left open to heal by granulation, it will permit the surgeon to treat intelligently a chronic cystitis. The wound in the skin can be partially closed and a large rubber drainage tube introduced into the bladder. After a few days the urine will pass the natural way and any little overflow is cared for by the upper drainage tube.

In young children where suturing the bladder is likely to be followed by primary intention the difficulties of the operation are very great on account of the extreme thinness of the bladder wall and the small abdominal wound. An attempt to close the vesical wound therefore prolongs the operation unnecessarily and should not be attempted unless the bladder is fairly healthy, and the patient is in good bodily condition at the time of the operation. Lembert's sutures in close apposition should be employed and the mucous coat must not be included. The bladder must be carefully manipulated during the sewing so as to prevent a cellulitis. After the wound is stitched an injection of an antiseptic fluid should be carefully made into the bladder to ascertain if there is any leakage. If the bladder is properly sewed no permanent drainage is indicated, but the soft catheter can be passed several times during the first twenty-four hours after the operation, and occasionally after the first day, so as to prevent any distention. The wound heals by primary intention and this occupies only a short time.

The abdominal wound is also closed and a small drainage tube is inserted into the lower angle of the wound. Von Bergmann sutures the bladder and packs the abdominal wound with iodoform gauze for forty-eight hours and thus prevents suppuration. He then closes the abdominal wound in two days after removing the gauze. Schmitz (*Langenbeck's Archiv*, vol. xxxiii., 1886) reports thirty cases of suture of the bladder in children with a mortality of nearly seven per cent. In the thirty cases of suture about half of these cases resulted in primary union of the wound. If children and adult cases are grouped it is estimated that in two-thirds of the cases the bladder wound reopens.

A few days after the operation the patient can sit up in bed and an uninterrupted and speedy recovery should take place. Prof. Annandale recommends the introduction of a lithotrite into the bladder in order to seize the stone and then to cut upon the lithotrite as a guide and remove the stone. A rubber catheter is introduced into the blades of the lithotrite through the abdominal wound and the instrument withdrawn with the rubber catheter. The drainage through the perineum and also in the wound above is the same as in the method already described.

The special indications for exploration of the bladder by the suprapubic method are found:

First. In cases of lithotomy for large hard calculi; also in lithotomy occurring in a patient suffering from paraplegia, a contracted pelvis, perineal tumors, encysted calculi, ankylosis of the hip, hemorrhoids, or great obesity.

Second. For the removal of certain foreign bodies as hairpins, bodkin-needles, etc., for the treatment of chronic cystitis, and for the operation of calculi in the female.

Third. In lithotomy occurring in a patient with greatly enlarged prostate, or with fibroma of the prostate, or in calculi found in diverticula behind the prostate.

Fourth. For the excision of tumors of the bladder.

Fifth. For rupture of the bladder.

The special advantages which the suprapubic operation offers may be enumerated as follows:

First The safe removal of large hard stones which cannot be removed by any of the other methods.

Second. The avoidance of perineal hemorrhage, of urinary infiltration, of perineal fistula, of laceration of the rectum and neck of bladder, the prevention of traumatic stricture and cystic hemorrhage. The avoidance of any interference with the genital apparatus.

Third. The prevention of a vesico-vaginal fistula in young women, or of permanent incontinence of urine in aged women.

Fourth. The safest operation in all forms of renal disease, and the only means of saving life in rupture of bladder.

Fifth. The tendency of recurrence of stone is much less than by lithotomy.

Sixth. Its extreme simplicity, its present reduced rate of mortality, its freedom from danger during its execution, and its safety for the general practitioner in comparison with the perineal operations or lithotomy.

I have collected one hundred and twenty-four cases of the suprapubic operation for the removal of stone since 1879.¹ I have collated all the cases that I could find in medical journals and some cases which have as yet never been published. The influence of antiseptics, and of the rectal rubber-bag together with vesical distention, is apparent when the cases are carefully examined. The death-rate until 1879 was high, since it reached the average of about twenty-five to thirty per cent., but owing to the experiments of Garson and Petersen that mortality has been greatly reduced.

There are one hundred and twenty-four cases. There are, *in toto*, eighteen deaths. This gives a gross mortality of about fourteen per cent. Of these eighteen deaths, the following seven can be, with justice, eliminated from the list in estimating the rate of mortality:

1. Belfield. Corrosive sublimate poisoning.

2. Briggs. Patient was moribund at the time of the operation, and was suffering from suppression of urine

before the operation. The operation was performed against the advice of the surgeon, and at the special request of the mother of the child. The conditions were necessarily fatal before any attempt was made to remove the stone.

3. Küster. A median operation was first performed to extract a piece of catheter. He was unable to remove the foreign body, and then performed a suprapubic cystotomy.

4. Martin. Recovery from operation; but patient died three months afterward.

5. Roberts. Recovery from operation. Patient had a gastric ulcer, and died two months after from perforation of the stomach.

6. Rivington. Recovery from operation. Patient died three months after from diarrhoea and a cystitis.

7. Terrillon. Patient died from bronchitis eight days after operation. Autopsy showed that the bladder was healthy—wound aseptic, and nearly healed.

There are eleven deaths, which can be directly ascribed to the operation itself. This gives one death in about eleven cases, or a mortality of about nine per cent., for the removal of stone by suprapubic cystotomy.

The mortality in the lateral operation, according to Sir Henry Thompson, is about one in every eight cases, or, in other words, over twelve per cent.

I am aware of the fact that objection may be raised to taking Sir Henry Thompson's statistics on lateral lithotomy; because other surgeons have published better results. Their experience, however, is not so great, nor is their number so large. In Sir Henry Thompson's cases lateral lithotomy was reserved for cases unsuitable for crushing. I will quote the statistics of other surgeons before any comparison is made.

Freyer reports one hundred and forty-three cases, without a death. Zelt reports one hundred and six cases, with three deaths, or a rate of mortality less than three per cent. Werewkin reports one hundred and forty-seven cases, with a mortality of six per cent. Hensinger reports two hundred and twenty-two cases, with a mortality of nearly seven per cent. Ebermann reports a mortality of fourteen per cent. Skinnissen reports one hundred and fifty-four cases, with seven deaths, or a rate of mortality of about four and a half per cent.

This great difference in the mortality of the lateral operation affords room for much conjecture as to its cause.

In lithotomy Sir Henry Thompson's last statistics show a death-rate of about six per cent. The Norwich Hospital records show a death-rate of over ten per cent.

In litholapaxy Dr. Freyer reports one hundred and eight cases, with a death-rate of nearly four per cent.; Keegan fifty-eight cases, with two deaths, or a rate of mortality of about three and a half per cent. Gross collected one hundred and eighty cases, with four deaths, or a rate of mortality of about three per cent.

The rate of mortality for the suprapubic operation performed with its recent modifications compares favorably with perineal lithotomy, and also with litholapaxy, when the stone is over an ounce. In addition to a favorable comparison, in regard to the rate of mortality in litholapaxy in large stones, the

¹ [The author has collected all the cases and placed them in an alphabetical table in which all the facts in connection with each case are given. Space will not permit the publication of the table in full, though it is one of great value, and will appear in full in the Transactions of the American Surgical Association.—EDITOR.]

important question of recurrence of calculi must not be forgotten. After crushing the recurrence is estimated at one in seven cases, while after lithotomy, one in twenty-five cases. This fact is one of very great importance in estimating the relative value of the two operations in any given case.

Still another very important point to consider, as to the superiority of the suprapubic operation, is the question of emasculation. Langenbeck, as a result of his vast experience, believes that often the seminal ducts are cut and sterility follows. Halberstadt reports eighteen lateral lithotomies in which the patients, after having grown up, married, and only one out of these eighteen cases had issue.

If reliable statistics could be obtained on this point there is no doubt this one fact alone would weigh very strongly against the perineal operation. The successful run of a series of lateral operations is brilliant, and shows wonderful skill on the part of the operator. The history of a patient should be examined years afterward in order to estimate the value of the operation from other points than its mere mortality. Dr. Charles Leale, whose experience has been very great in collecting evidence upon this point, related to me several cases under his own observation when emasculation has been the result of the lateral operation. These patients had little or no hair upon the face, their voices were shrill, their testicles were atrophied, and they were, in fact, eunuchs. I doubt not but many medical men can narrate similar cases. I do not wish to exaggerate the importance of this subject, but simply to call attention to the point as a subject for further examination in the way of collective investigation.

The most important proof of the value of the high operation lies in the fact that heretofore the suprapubic method has been reserved for the removal of calculi above the average size where all other operations were inadmissible. If now the suprapubic operation with its recent modification is resorted to in those cases where the perineal operation only is employed the results will be far more brilliant. These facts demonstrate that the suprapubic operation, as now performed, is a far more successful operation than has been supposed from a reference to its early statistics. It will not, however, supplant litholapaxy in cases of small and soft calculi; but in large stones its results already are far more favorable than perineal lithotomy. The limitations of lateral lithotomy are narrowed by the introduction of the high operation, and future experience will, in all probability, limit the cutting operation for stone through the perineum to those cases where a tight stricture of the urethra exists, and where the operation of external perineal urethrotomy is indicated for the purpose of relieving the urethral stricture.

In conclusion, it may be said that suprapubic cystotomy, in its present form, presents to the practical surgeon a safe, reliable, and radical operation. It should be remembered, however, that the newly modified suprapubic operation has not been sufficiently submitted to the crucial test of time and experience to enable surgeons to estimate accurately its value under all conditions. Hence the great danger of generalization at present. Enough has

been done already to convince the most incredulous that in the removal of large stones, and in tumors of the bladder, there is no question as to the superiority of the suprapubic operation.

The revival of this high operation, and its application in cases of traumatism of the bladder, have shown that surgical intervention can save human life where, but a few years ago, these cases were considered fatal. No one can dispute that the two recent cases of Sir William MacCormac bear brilliant testimony to this statement.

Finally, the rate of mortality by the suprapubic operation of about nine per cent. is high for a surgical operation; but a low rate of mortality for an operation performed under the conditions in which this method has been employed. In considering this mortality two facts must be remembered:

First. The causes of death in the majority of the cases are due to septic infection, and not to the immediate effects of the operation itself. The employment of more rigid antisepsis for the bladder should improve this rate of mortality. At the present time there is no ideal antiseptic especially and peculiarly adapted to vesical surgery. The attention of the Association should be directed to this important point.

Second. The largest and hardest stones have been reserved for the high operation. The patients have been, as a rule, in poor physical condition. Improvements in the details of bladder antisepsis and extension of the limits of the high operation to include stones of smaller size, but not to embrace those suitable for litholapaxy, and an earlier period of operation before patients are exhausted from chronic vesical irritation will reduce the rate of mortality so as to compare favorably with any other cutting operation for stone.

NOTES ON THE CAUSE AND TREATMENT OF FUNCTIONAL INSOMNIA.¹

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DURING the past years I have felt a deep interest in that large number of cases of morbid sleeplessness occurring in persons of the neurasthenic habit. I am not concerned with cases of sleeplessness due to other causes, to gross lesions of the brain, incipient insanity, the many acute febrile conditions, nor with wakefulness due to pain.

Allowing for the intentional or unintentional deception in such matters, we still meet with a very large number of persons who may complain of this or that symptom of cerebral or of spinal neurasthenia, but whose chief trouble is insomnia pure and simple. This insomnia may imply mere restless sleep, a sleep of only two or three hours a night, or absolute sleeplessness. And I speak of neurasthenic rather than hysterical insomnia, because I find that really hysterical persons are not so apt to be sufferers from true insomnia, and by far the greatest majority of my cases occurred in men and women

¹ Read before the New York Neurological Society, May 3, 1887.

who could not be accused of the hysterical taint. First, a few typical cases.

Mr. L., aged thirty-four. Educated as engineer, now designer in a large house-decorating firm, consulted me for the first time, nearly eighteen months ago, on account of protracted spells of insomnia. In answer to my questions, he stated that he would sleep tolerably well for a few nights in succession and would then lie awake night after night for weeks. He claimed not to sleep at all during these times, to feel languid and tired in the morning, and as his mind was very actively engaged during the day, he felt completely exhausted. This his looks showed, and, indeed, the marvel was that the man accomplished as much as in reality he did. When asked what kept him awake, whether he thought of his business affairs and so on, he stated that he had no reason to worry about them, and if he did think these matters over, it was simply that he had to busy his mind in some way while lying awake. Headaches were not frequent, but he complained of characteristic pressure on the top of the head. Knee-jerks normal, no tremors of the fingers, no cardiac trouble, but feeble heart beat and weak pulse. Up to this time the patient had been leading a very irregular life, working till late at night, taking his meals whenever it suited his conveniences, and enjoying but little out-door exercise. His entire mode of life was regulated in a way that we shall discuss later on; he was given some hypnotics at the start, these were soon withdrawn, and every thing went well for a period of three months, when he lapsed back into some of his old habits, and again began to suffer from insomnia. From this time on until about six months ago, periods of sound sleep alternated with periods of insomnia. By consent of the patient every form of hypnotic medication was abandoned; massage, electricity, and active exercise were chiefly relied upon.

About six months ago the patient became engaged, and two months later he married. Both engagement and marriage were taken in a matter-of-fact way and seemed to exercise very little influence for good or bad. A few weeks after his marriage were spent in Florida, where the enervating climate and the absolute lack of regular employment exercised a very deleterious influence. "As long as I was in Florida," the patient told me, "I did not close an eye," and this statement his wife corroborated. Since his return to this city, to his regular occupation, and to absolute regularity in his mode of life, including various forms of active exercise, riding, bowling, and the like, he has been sleeping soundly and feels better than ever before. The case illustrates the worthlessness of hypnotic medication and the importance of attending to matters of general regime.

Another case is that of Mr. J. H., at. twenty-nine, a man of very nervous disposition, easily excitable, and easily depressed in spirits. For the past year he has been greatly distressed by sleeplessness; sleeping but a few hours each night and then very restlessly. He is a man of rather slim physique, but no demonstrable organic changes of any sort. Pulse small and heart beat weak, has occasional asthmatic attacks at night. No headaches. Habits good at present, somewhat doubtful as to past. Knee-jerks exaggerated. As he consulted me during the summer months, I did not waste time with hypnotics and spinal tonics, but sent him to the Adirondacks at once, giving him full directions (in accordance with the maxims of Oertel) as to quality and quantity of exercise he was to take. Since that time he has not been troubled with insomnia.

Mr. W. J. K., at. thirty, was also a sufferer from insomnia, which was brought on by over-work and worry over his father's illness and death some months previ-

ously. All neurasthenic symptoms, including exaggeration of knee-jerks. Insomnia relieved by amorphous hyosciamia given first four nights, and by change to country air with same directions as other patient.

If we are to gain an insight into the causes of this form of functional insomnia, it will be well for us to note how and what little is known regarding the conditions of normal sleep. I am aware that little or nothing is known of the organic basis of neurasthenia, and it may seem useless, therefore, to attempt to reason about the causation of one of its symptoms. Let us see, however, what physiologists have done to aid us in arguing this question.

The physiological theories regarding sleep are legion in number, a few facts only are undeniable. The first that the abolition of peripheral sensations makes for sleep. We need not depend upon the once famous example, communicated by Strümpell,¹ that has gone the round of all the monographs and textbooks, of the boy who could receive impressions from the outer world through his right eye and left ear only, and who fell asleep as soon as both these media were occluded. All of us know that when we are once in bed, the absolute quiet of night, and utter darkness of the room, are most conducive to sleep, and that if there be no noise or light in the room we can fall asleep, provided that other mighty factor in the case, fatigue—be in the ascendant. We know, too, that in the absence of actual peripheral stimuli we can project cortical activity to the periphery, and thus actually engender a state of wakefulness. Before the suspension or withdrawal of actual peripheral sensations it is of the very greatest importance that the cortex should be at rest.

Reasoning by analogy from muscular fatigue, Obersteiner,² Preyer,³ and others have supposed that during mental activity, acid products are formed in the cerebral tissues, and that as soon as a sufficient quantity of this is on hand sleep supervenes. Preyer has even gone so far as to suppose that lactic acid is the product of nerve fatigue as it is of muscular fatigue. There are, to my knowledge, no facts in corroboration of this view. A more ingenious suggestion has been advanced by Pflüger in his *Archives* for 1875, p. 468. He argues that cortical activity can only be maintained by the proper oxygenation of cortical tissue. When this supply of intramolecular oxygen is exhausted, or if the supply cannot be promptly renewed, sleep supervenes. The supply of oxygen is, of course, effected through the blood. On this theory, too, sleep might be the result of an insufficient supply of blood-oxygen, or there might be some peculiarity in the nerve tissue itself which inhibited nerve action. Lyman⁴ has carried the argument one step farther, and has attempted to show that *artificial* sleep is the result of impregnating the brain with anaesthetic substances that interfere with sensibility, and, finally, produce stupefaction by hindering the normal processes of intramolecular oxygenation.

¹ Strümpell: *Deutsch. Arch. f. kl. Med.*, xxii.

² Obersteiner: *Zur Theorie des Schlafes*. *Ztschr. f. Psych.*, xxix.

³ Preyer: *Ueber die Ursachen des Schlafes*. *Stuttgart*, 1877.

⁴ Lyman. *Insomnia, and other Disorders of Sleep*. *Chicago*, 1885.

lecular oxidation in the protoplasm of nervous tissues. These are his words, but such speculations will be of little use to us in explaining morbid wakefulness, and whether or not the direct cause of sleep resides in a peculiarity of the nerve tissue itself, or in the changes of blood supply, it will be more important for us to cling to the indisputable facts observed and advanced by Mosso,¹ Burkhardt,² Meynert,³ and others. Mosso proved, by direct observation, beyond the shadow of a doubt, that emotional or intellectual activity increased the activity of cerebral circulation, and, which is an important fact for us, that there was a correspondingly deficient supply in other parts of the body, particularly in the extremities.⁴ I shall have occasion to show that in several cases of very troublesome insomnia the peripheral circulation was seriously at fault.

Putting it broadly, sleep is a vasomotor affair ; insomnia a vasomotor disturbance. But the rub comes in when we attempt to decide whether the vasomotor innervation of the cerebral bloodvessels is an extra-cerebral function, or whether there be not in the brain itself at least one, perhaps not the only, vasomotor regulator. If so, the trouble is worse confounded, and this inter-relation and inter-dependence of vasomotor and cerebral function seriously complicate matters. Many of us are, I think, hampered by the idea that the supply of blood is relatively and absolutely so plentiful in any one part or organ, that a change in the blood supply of that part or organ cannot seriously interfere with the blood supply of a distant organ. If the quantity of blood alone were to be considered, such changes would not be of serious import, but we must not forget that anaemia or hyperæmia of an organ has, or, I will say, may have an important influence upon pressure of circulation in other distant parts. At all events, I am not willing to believe that the conditions I have observed in several patients were entirely accidental, although the observations were made and noted at a time when I was not concerned with any theory on this head.

The case which I now relate will show what a fickle thing sleep is, and how it may be seriously influenced by apparently trivial causes.

A lady, aged forty, the mother of four children ; married at a very early age, and has always had irregular menstruation, which very often is extremely scanty. The patient is a stout person with feeble pulse and cold extremities, who suffers by turns from sudden flushing of the face, light asthmatic attacks,⁵ and occasional severe headaches. The patient is a lady of leisure, very much averse to severe physical exercise, and altogether too fond of a carriage. Heart sounds are weak, probably from deposit of fat about the heart; heart beat not intermittent ; no audible murmurs. All abdominal

and thoracic viscera healthy. Urine free from albumen and sugar. For the past ten years patient has had but the one serious trouble—insomnia. According to the account which was first given me, over two years ago, she had protracted spells of sleeplessness, during which time she would have great difficulty in falling asleep, and if she fell asleep, would at best sleep but one or two hours. This account is substantiated by the statements of her husband and of her maid. She had been thoroughly soaked with bromides, chloral, etc., with the result of procuring a few nights' good sleep, to be followed by many more of distressing insomnia. The time of menstruation was the most critical period. If the menstrual flow was free, sleep would be tolerably good ; if the flow was scanty, insomnia would be certain to set in during the time of menstruation, and for at least eight or fourteen days to follow. In the course of the time that the patient has been under my treatment, I have had ample opportunity to verify this exact succession of events. During these periods of insomnia galvanism to head, lukewarm ablutions of the entire body before retiring, application of mustard to nape of neck and upper spine, the exhibition of urethan or paraldehyde : each agent would be followed by temporary relief, but no permanent cure was to be effected in this way. During the past few summers drinking the waters of Marienbad or Carlsbad, brought the greatest relief ; and here sleep was induced, I am certain not so much by the effects of the water upon a mild form of chronic constipation, and the reduction of her superfluous adipose, as by the regular exercise she was compelled to take, and the bland diet she adhered to while under treatment at these places. As she returned to this city and again fell into her old habits, sleeplessness would return with unerring certainty. Like so many patients, this one cannot be impressed with the importance of obeying strict rules as to exercise and diet, and is much more deeply impressed by the exhibition of narcotic drugs.

No case that I have had has been so rebellious to treatment, and none has so deeply impressed me with the intimate relation existing between disturbances in peripheral circulation and the condition of insomnia. The irregularities of peripheral circulation are evidenced by the cold, clammy hands, the cold feet, and the scanty uterine flow at time of menstruation. It is not a difficult matter to produce a single or a few nights' sleep in patients even of this description, chloral, urethan, paraldehyde, hypnone each might bring this about ; and, indeed, it is to be regretted that this is the case, for upon the withdrawal of these agents, the patient is, as a rule, much worse. You can in this way avoid an otherwise sleepless night, but you cannot and do not cure insomnia. To do this, you must strike at the root of the trouble, and endeavor to better the condition of the circulation.

If anaemia of the brain is conducive to sleep,¹ general anaemia is, on the other hand, a fruitful source of insomnia. These cases are so common that it appears quite superfluous to cite examples in support of this view. A short account of two will answer our purpose.

Mrs. R., aet. thirty-one ; married twelve years ; no children ; has always been nervous, and is easily excitable, but there is no history of hysterical attacks of any sort. Considerable anaemia and very distressing palpitation, with occasional attacks of precordial fear at

¹ Mosso : Abstract of his article in *Brain*, vol. iv. p. 100.

² Quoted by Meynert.

³ Psychiatry, cf. chapter on Nutrition of Brain.

⁴ Mosso, loc. cit., p. 105 : "In sleep there occurs a dilatation of the vessels of the extremities which can be measured in the forearm by the plethysmograph. It corresponds with a relaxation of the vascular walls. Every excitation from without causes a contraction of the vessels of the forearm and a subsequent increase of the blood pressure, causing a larger flow of blood to the brain."

⁵ No evidence of gout in this case. Duckworth (*Brain*, vol. iv. p. 145) referred to asthmatic attacks in cases of gouty insomnia.

¹ A fact not wholly proved.

bed-time. Menstruation has always been irregular, occurring, as a rule, every five or six weeks. Constipation the rule. Is a great sufferer from headaches of the paralytic migraine type, and from insomnia. The two conditions are sometimes coincident, but not necessarily so. On tonic treatment with iron, gentian, and strychnia, the use of caffeine and ergot for the migraine, and, above all, by closely following out a prescribed regime as regards exercise and diet, the patient has been greatly relieved in the course of two months' treatment, and has been sleeping well for the last two months.

Another, and similar case, is that of Mrs. S. G., æt. forty, mother of four children, who, according to her own and husband's statement, has been a severe sufferer from insomnia and headaches for years. Every form of excitement, of which she has had not a little, would be followed by insomnia and headaches; during such periods she would sleep but an hour each night. Headaches, if present, would keep her awake, but when entirely free from these she spends many sleepless nights. The patient has been very much reduced in strength by chronic gastro-intestinal trouble, with alternate diarrhoea and constipation. Marked anaemia, no cardiac mischief, pulse weak but regular. Urine free from albumen, no sugar; but heavy deposits of urates. In this case, which is still under treatment, marked amelioration has been effected, first and foremost, I think, by the checking of the intestinal catarrh through the use of naphthalin, the pursuit of a non-irritating, nutritious diet, with alkaline waters, and the taking of regular active exercise.

I do not wish to convey the impression that to my thinking all cases of insomnia have the same causation, and how mysterious the cause sometimes is, is frequently brought home to me by a patient whom I see every now and then, a man, æt. fifty-five, very thin, and slightly anaemic, a hard worker in his day, and now a man of leisure, who goes to bed regularly at eleven, to wake up again at two or two-thirty in the night, who then walks the floor until morning, or sits at the window in an arm-chair. For at least six years the man has passed every single night in this way. He does not sleep during the day, the functions of all his organs are perfect; his appetite fair, and his spirits surprisingly good. He was benefited for a time by nocturnal applications of galvanism to the head and by general faradization, but these soon lost their effect; every hypnotic is exciting, and one could scarcely prescribe a stricter diet, more exercise, and a more regular mode of life than he now observes.

From some of these cases I have just mentioned and a number of others, I have been led to recognize the intimate relationship between certain forms of headache and insomnia. In some headache and sleeplessness were coincident, in others there was an alternating relationship between the two conditions.

On looking over my cases of migraine associated with insomnia, I find that the migraine has been of the paralytic type, and that if sleep could by some means be secured the headache would disappear from that time onward. In cases of spastic migraine I have had patients complain of insomnia, but my notes do not show that this insomnia occurred at or about the time of an attack of migraine. Here is a case in point.

F. M., æt. thirty-three, merchant, unmarried; fond of the good things in this world, but not given to troubling

himself or exerting himself in any way, has been a sufferer from severe migraine ever since he was five years old. Attacks come on at irregular periods. My first acquaintance with the patient was during one of his attacks which was of a distinctly paralytic type—face flushed, pupils small, etc. These attacks are accompanied, as a rule, by sleeplessness, which the patient does not think is to be attributed to the severity of the headache. He had a rather bloated look at first, and was somewhat gluttonous in appearance.

I insisted on an entire change in his mode of life, compelled him to take active exercise, ride, swing dumb-bells, etc.; reduced his diet, and treated him with galvanization to the head. Patient has been free from migraine and insomnia for three months. Galvanism had a very pronounced influence for good upon his headaches, and his was one of those cases which do well under antipyrin. (I may say, incidentally, that, after two fifteen-grain doses of antipyrin, his headache disappeared, and he fell into a sleep lasting ten hours. I am not ready to pronounce antipyrin a hypnotic, but in insomnia associated with migraine I am inclined to think, from my experience in this and two other cases of paralytic migraine, that it kills two birds with one stone.)

I have had proof in still another way of this same relation: without any preconceived notions, except such as were suggested by the general condition of the individual patient, I find, on referring to my notes, that the same form of treatment which has been successful in a number of cases of insomnia has been successful in most of the cases of migraine with which I have had to cope. Until I have good reason to think otherwise, I shall for therapeutic reasons look upon migraine and insomnia as vaso-motor disturbances.¹

As for the treatment of cases of functional insomnia, I would suggest, as the result of my experience with twenty-four recently treated cases² of functional insomnia, that if it be due to mental overwork, or other exhausting causes, these be first removed. Pronounced anaemia and general neurasthenic symptoms should be treated at once by the ordinary

¹ But is there any possibility or probability of determining the state of the cerebral circulation in these morbid states? While the appearance of pale or flushed face may permit a guarded inference respecting the state of the cerebral bloodvessels, it is by no means certain that flushed face means flushed brain. Careful examination of retinal bloodvessels might throw some light upon this point; but while writing this paper, I have received a reprint of an article by Eulenburg, of Berlin, in which another possible method of determining this question is suggested. Eulenburg has made accurate measurements of the resistance offered to the galvanic current by passing the same in a sagittal direction through the head. He determined the minimum of resistance in each case, and at each sitting, and was surprised to find that this minimum resistance varied but little, not only in the same individual, but in different individuals of the same age and condition of life. The average minimum of resistance in healthy persons was between 1200 and 1600 ohms. Marked departures from this average were noted in gross brain lesions, but still more distinctly in cases of severe functional disturbances—in hemiparesia, anaemia, chorea, Basedow's disease, hystero-epilepsy, and the like. The increase or diminution of the minimum of resistance Eulenburg attributes to the variability of the quantity of blood within the skull. But the question is not settled yet; for although Eulenburg was able to state that the resistance of a given column of blood was twice as great as an equal volume of cerebro-spinal fluid, he found the resistance increased in those conditions of the brain in which there was presumably a reduction in the total quantity of blood present within the cranial cavity.

² Dispensary patients seem to be relatively free from insomnia. While the number of neurasthenics is great enough, they do not often complain of sleeplessness.

blood and spinal tonics; but, above all, every precaution should be taken to increase the force of the heart and of the whole circulatory apparatus; and that this cannot be done better in any way than by the use of cool douches to the head, chest, and spine; by prescribing a bland diet, together with some alkaline water, and by compelling the patient to take considerable outdoor exercise, either in the form of walking several hours each day, or of riding, rowing, bowling, and the like. During the summer months, mountain climbing, if not carried to excess, would be an admirable substitute for such exercise as we city people are at other times compelled to take.

The adoption of the rules laid down by Oertel would surely be followed by good results.

The substitution of passive for active exercise is, in my opinion, not sufficient, and incidentally I may remark that a patient who was otherwise doing well under a modified Weir Mitchell treatment was, during the greater part of the time, a great sufferer from insomnia.

After a few weeks of such treatment, I believe there will be marked improvement in many, if not in most cases of insomnia. But patients have an annoying way of wishing to obtain *prompt* relief, and obtaining this they become more tractable, and more amenable to every other form of treatment. It is on this account chiefly that we cannot dispense altogether with hypnotics, and must administer them occasionally in spite of ourselves.

Summarizing the experience I have had in the above cases of functional insomnia seen during the last year or more, I find that I have used for treatment chloral and bromide, the bromides separately, the amorphous hyoscyamine, paraldehyde, urethan, and, in a single instance, hypnone. Morphine I have never used in these cases, as I object to it in all cases in which there is not severe pain, and certainly object to it in cases such as these when the patient would be quite prepared to contract the habit. The bromides alone have been of occasional service to me if given in one-half to one drachm doses, in cases of extreme restlessness, but even in these I have learnt to substitute the amorphous hyoscyamine in doses of about one-twentieth of a grain, repeated every three hours.

I object most strenuously to the plan advocated by Dr. W. A. Hammond and others, of keeping these patients for a long time under the influence of the bromides. These neurasthenic patients require all the will power they can possibly command, and are in much greater need of tonics than bromides. It is easy enough to bring about a condition of semistupor in such patients, but that is not equivalent to bringing about healthful sleep.

Paraldehyde I used freely about nine months ago, and for several months later. I gave it in doses of one to one and a half drachms in claret. This dose was always sufficient to bring about sleep the first few nights, but if required beyond this time, the drug proved unsatisfactory, as the hypnotic dose had to be increased, and, while I noticed no deleterious action upon the heart or other organs, the odor it imparted to the breath was excessively disagreeable.

One female patient, whom I had not had occasion to see for some months, sent for me one morning after she had had a sleepless night. She had been using paraldehyde steadily in spite of my remonstrances, and I found, on entering, that the room was actually filled with the exhalation of paraldehyde.

Urethan has been satisfactory in a number of cases. It has no disagreeable after-effects, and does not irritate either the stomach or bowels. It has been my experience that the dose should be between two and three grammes, and that greater quantities of Merck's preparation induce wakefulness rather than sleep.

The mixture of fifteen grains of bromide and twenty grains of chloral has often come to the rescue when every other hypnotic refused to act. I have seen no ill-effects follow the exhibition of this mixture, even in cases of weak heart.

A word as regards electrical treatment. In several cases in which no other remedy could secure relief, I have been able to induce sleep by galvanism applied to the head after the patient had retired for the night. I have given galvanism in the form of subaural, supposed sympathetic galvanization, and by passing currents directly through the head, with one pole on the nape of the neck, and the other on the forehead; changing cautiously the nature of the poles, and allowing the current to flow in an opposite direction, and never using a current of more than two milliampères. Occasionally I placed one pole over each temple. I have not been successful in the endeavor to bring on sleep by general faradization. Faradism to the head I would not apply under any circumstances. Moreover, so far as our present knowledge goes, galvanism is more effective than faradism in bringing about vasomotor changes.¹

If I have accomplished nothing else, I trust I have convinced some of you that in the treatment of these cases of neurasthenic insomnia, we are in need not so much of additional hypnotics, as of more effective means of regulating and influencing cerebral circulation.

THE POLAR METHOD OF ELECTROTHERAPY IN GYNECOLOGY.²

APPLICATION, DOSAGE, AND MEDICATION.

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(Concluded from page 570)

IV. ELECTRO-MEDICATION.

We cannot doubt the value of electricity to man; that it is an agent of infinite power, and one adapted to all possible purposes, the discoveries of the last decade have shown, and this subtle fluid, which has

¹ Since the reading of my paper an article covering this part of the subject has been published by Massey in this journal for May 7, 1887. It will be observed that my opinions differ in some respects from his. It is worth noting that in the discussion following the reading of my paper, the soporific effects of Franklinization were referred to by several speakers, thus corroborating by anticipation Dr. Massey's remarks.

² Read before the St. Louis Medico-Chirurgical Society.

added to so great an extent to the comfort and convenience of the human race, which is so well serving the outer wants of man, must now be made to contribute to the welfare of his inner being. The medicinal virtues of electricity are still to be developed; many attributes which are of value to us you know—the contracting power of faradism, the chemical properties of galvanism, as you see by the affinity of acids for the positive pole, and of alkali for the negative, and the electrolytic action of galvanism, as shown by the rapid disintegration of water, hydrogen seeking the negative pole, oxygen the positive.

I have told you that I have instantaneously checked hemorrhage in the uterus post partum, by the contractile action of faradism in desperate cases, and by two applications brought about the menses which had ceased for a twelvemonth; that I have destroyed intrauterine tumors as large as a hen's egg in three sittings of five minutes each; completely relieved the distressing symptoms of congestion, gastritis, dysuria, and constipation, in a patient suffering from a large abdominal tumor, and reduced the circumference by five inches, by five consecutive daily treatments of eight or ten minutes each. I have dispersed the painful swelling due to a contusion of a joint, which had for three weeks resisted treatment, by a single mild application of faradism, and relieved the pain of articular rheumatism which opiates could no longer control. I have relieved aneurisms and destroyed angioma by the coagulating action of the positive pole, and increased the flow of blood from indurated hyperplastic uteri by the fluidifying action of the negative pole; a prolapse with oedema of the leg was relieved by faradism, and the patient, who had not walked for twenty years, was enabled to move about as freely as any one of her age, after a two months' treatment; a stenosis of the uterine canal, which caused agonizing menstrual suffering, was relieved in three sittings of five minutes each, and permanently overcome by six or seven more; the most obstinate pruritus, which had long resisted treatment, was cured by one application; constipation and dysuria have been rapidly relieved after resisting the usual remedies. We have just discharged a poor girl who came to the clinic two months ago, partially disabled by a solid pelvic effusion, which had the appearance of a fibroid rather than of an inflammatory product, filling the pelvic cavity, displacing the uterus, and wedging the cervix in between the effusion and the symphysis; in twelve treatments, electro-cauterization, of five minutes each, with from 60 to 100 milliampères, the complete absorption of this mass was brought about, it has disappeared, leaving only the somewhat thickened normal tissues. How rapidly it was destroyed I cannot say, since no examination was made until the twelfth treatment, and then it was gone. Is not this a triumph?

An effusion, as hard as fibroid tissue can be, which had for five years been undermining the health of this poor girl, and at last almost disabled her by hemorrhage and pain, is dispersed by twelve painless treatments, which not only do not interfere with her work, but aid her in it by the immediate relief afforded; each application was marked by

improvement and increased well-being; first hemorrhage, then pain subsided, whilst her strength steadily increased.

This rapid result has induced me to observe other patients more carefully, and I find similar effects in similar conditions, with an opportunity of observing the final disappearance, the steady decrease, of such effusions called fibroids by some.

Such are the results which may be obtained by the proper use of the "polar method," by the application of strong and effective currents, and their localization, as taught by Apostoli in the treatment of fibroid tumors. More still can be accomplished.

In an early paper I treated of electricity as a nerve sedative, and a stimulant, a muscle contractor, and antispasmodic, an antiphlogistic and counter-irritant, a vesicant, a tonic and promoter of development, an absorbent, chemical cautery and escharotic, electrolytic, hemostatic and decongestor, and a promoter of hemorrhage and congestion. It has other properties still. Since then I have utilized it as a *medicator*, and although I have not as yet obtained such striking results, this property of the electric current is one so peculiar that it deserves recognition; I have termed *electro-medication* this method of treatment by the nascent ions of an electrolyte.

By the electrolytic, or electro-chemical, action of galvanism water is resolved into its components H and O. Bromide of potash, iodide of potash, muriate of ammonium, and chloride of sodium respond in a precisely similar manner, while the bases are set free at the negative pole, the metalloids, Br, I, and Cl, are found at the positive pole.

In order to limit the extent of this paper, I shall confine myself to the above combinations or types. Br, I, and Cl are powerful gases, especially active in the nascent state in which they are brought in contact with the tissues in electro-medication. I shall not here treat of the possibilities of conducting the electrolyte *into* and *through* the tissues, but merely of its effects *upon* the tissues in contact with the pole at which it is set free.

If we place positive and negative poles of a galvanic battery, armed each with a platinum needle, into a glass filled with a solution of iodide of potash and starch, we will at once see the bubbles of hydrogen rising at the negative needle, and the fluid about the positive pole turning blue from the action of the developing iodine on the starch; in like manner is the iodine set free at the positive pole when in contact with the tissues.

Saturated solutions must be used and prepared at the time, as solutions which have been standing are no longer serviceable on account of chemical changes which take place.

Platinum should be used as a carrier, as most of the nascent metalloid is taken up by other metals and lost to the tissues, if the electrode be of susceptible metal.

The stronger the current the more rapid the development.

The positive pole must be the active pole, and must carry the solution in contact with the tissues to be acted upon.

The negative must be the dispersing pole.

These applications are admissible only in cases in which galvanism is not contraindicated.

They can be made most effective in locations in which greater quantities of the fluid can be applied, as in the vagina, in the uterus, and on the abdomen, where large electrodes can be placed.

These applications may be made directly for the purpose of medicating the diseased surface, or as an addition to the proper application of the electric current, as indicated in the case—*e. g.*, in making a vagino-abdominal application of galvanism for purposes of absorption in chronic perimetritis, we obtain precisely the same effect from the electric current, whether we use the abdominal plate saturated with water or with iodide of potash; but in the latter case we assist its action by the developing iodine.

Iodine may be applied in cases of cellulitis by the usual vagino-abdominal application.

a. With the positive dispersing electrode, saturated with iodide of potash over the diseased side, and the negative cotton-covered ball electrode in the vagina, using currents of 40-80 milliampères.

b. With the vaginal ball electrode covered with absorbent cotton saturated with iodide of potash in the vagina, and the negative dispersing plate on the abdomen, using currents 40 to 80 milliampères, or over; in this case the vagina can be filled with the fluid, and a more effective action be produced.

c. In cases of hyperplasia and metritis a saturated solution of iodide of potash is applied to the cavity, and after the tissues are moistened with this, a delicate applicator, best of platinum, is armed (as for medicinal application) with absorbent cotton, saturated with the solution, placed in the cavity, and connected with the positive pole; the abdominal dispersing plate being the negative pole. The current should be of such strength as it would be if used merely for its proper effect; but if this is less than 30 or 40 milliampères, the application should be prolonged to six, eight, or ten minutes, in order to allow of sufficient development of iodine; 100 and 150 milliampères may be used.

Bromine. A powerful cautery and antiseptic; is useful—

a. In endometritis with profuse secretion, or with offensive discharge, as an intrauterine application, bromide of potash being used in precisely the same manner as the iodide in the last-mentioned case.

b. To the cervix the application may be made by saturating the cotton covering of the positive electrode with the solution and pressing it against the tissues.

Chlorine is developed from common salt or from chlorate of potash, and will prove less serviceable than either of the preceding agents. Chlorine may be used in the uterine cavity after the removal of offensive tissue by the curette or the douche.

These elements in their nascent state are indicated when a gentle, diffuse, and general action is desired, and the necessary accompaniment of this method of application, the galvanic current, will further the treatment; they are most effective if sufficient quantities of the fluid can be utilized.

Many other remedies may be so applied, and I have merely mentioned the above as examples of this method of electro-medication by which certain advantages may be attained, which will, I hope, be more fully developed by continued experiment. Possibly we may be enabled to carry remedies into the tissues, as was at one time hoped by that enthusiastic electrician and eminent surgeon, my honored teacher, Victor von Bruns, more than twenty years ago.

Recent operators have again claimed to have carried iodine into pelvic effusions by this means. I have myself only attained negative results in my attempts to develop this method of interstitial medication which would prove the turning-point of local applications, and a most progressive step, if it could be accomplished. As I have no results, I will not discuss the subject, and have confined myself to what I have found feasible, superficial electro-medication by gaseous elements in their most effective state, when nascent.

I have been gratified by the general interest which is taken in the development of gynecological electro-therapy, and more than pleased by the results of my efforts to establish the galvanometer, the use of effective currents, and the large dispersing plate for the indifferent pole; hence I have not waited to develop fully this method of electro-medication, but now present to you the outlines and the fundamental principles of the method which I believe to be susceptible of development, and this I hope it will receive at the hands of one of our active workers who is interested in the success of electrotherapy.

MEDICAL PROGRESS.

COCAINE IN THE TREATMENT OF WHOOPING-COUGH.—*BIANCHÉ* has given cocaine internally for whooping-cough with good results. His dosage was from $1\frac{1}{2}$ grains and 4 grains to $7\frac{1}{2}$ and 12 grains in 24 hours. Given in solution in small, frequently repeated doses.—*Lo Sperimentale*, 1886.

TREPHINING FOR PACHYMENTINGITIS.—The following case is reported from the Royal Infirmary, Dublin, from the clinic of *GRAINGER STEWART*:

After consultation on the morning of March 1st, as the symptoms had become during the night even more pronounced, it was decided to trephine without delay. The point selected was that corresponding to the posterior part of the third left frontal convolution. Chloroform having been administered, a curved incision, three inches long, was made along the lower edge of the part to be trephined. A trephine, with diameter of one inch, was applied, and a circular piece of bone removed. The dura mater being partially adherent to the bone, was torn at one point in elevating the circle, and through this opening there immediately welled out with a pulsatile movement a quantity of serous fluid, at first brownish-red, afterward dark red in color. The opening in the dura mater was enlarged, and about six ounces of this fluid escaped. On inserting the finger, it was found that the fluid lay between the dura mater and the arachnoid, in a space extending backward about three

inches, and forward two inches, and it at once became clear that the pressure of a hemorrhage had led to the increase of the symptoms. We concluded that this hemorrhage was the result of a pachymeningitic process, and recognized that while the immediate danger had probably been obviated, the ultimate prospects of the patient were less favorable than they might have been had an abscess within the hemisphere been the cause.

On recovering from the chloroform the patient showed marked improvement in respect of intelligence, sensibility to touch, and motor power, and he soon began to speak sensibly, and to express the great relief he had experienced from the operation. The exaggeration of reflexes which had appeared on the right side had now passed off.

On March 6th nineteen convulsive fits occurred in the course of six hours, the patient often screaming loudly during the attacks. The condition gradually became worse; during the last hours of life the convulsions had for the most part disappeared; the patient lay comatose, breathing stertorously, and with much puffing of the cheeks, especially the right. The skin and conjunctival reflexes were abolished, the deep reflexes were masked by clonus in the right arm, were exaggerated in the left arm, and were completely absent in both legs. Respiration became peculiar; the tracing taken with Marey's polygraph showed 26 full respirations, 19 shallow, 20 full, 18 shallow, with sudden alternation. The urine was drawn off; it was dark in color, very acid, and contained a considerable amount of albumen, but no peptone, bile, or sugar. There was an occasional jerk of the muscles of the fingers or of the pectorals. The character of the breathing changed suddenly, expiration becoming much longer and sighing in character, and the patient died shortly after 11 P.M. Just before death the temperature in the left axilla was 98.8° F., and in the right axilla 102.4° F., the pulse 150, and the respiration 50 per minute. After death the temperature rose in both axillæ, but more in the left than in the right.

—*British Medical Journal*, April 23, 1887.

CONVENIENT FORMULÆ FOR THE USE OF BALSAM OF COPAIBA.—For internal use:

R.—Balsam copaivæ 2 parts.
Spirit. juniperi 3 "
Spirit. ætheris nitrosi 1 " —M.

Sig. 30 drops 4 times daily.—*SCHCEMANN*.

An emulsion, for topical use, by injection:

R.—Balsam copaivæ 4 parts.
Sodii carb. cryst. 2 "
Aquaæ q. s. ad. 100 " —M.

Sig. For injection.

This emulsion was originally a French prescription, but being a convenient and permanent emulsion has been widely used. It is commonly diluted with three parts water, when an intravesical injection is made; when excessive pain is present, a few drops of tincture of opium may be added.—*JEANNEL*.

R.—Balsam copaivæ,
Extr. cubebaæ aā 3 2½.
Cubebaæ pulv.,
Myrrh. pulv. aā q. s.

Ft. pil. 50 in num. Coat with gelatine.

Sig. Two or three pills several times daily.

TREATMENT OF MALIGNANT STRICTURE OF THE OESOPHAGUS BY TUBAGE.—*SYMONDS*, of London, reports his methods as follows:

1. So long as solids can be swallowed, let the patency be maintained by the passage of bougies, for neither by tubage nor through the opening formed by gastrostomy can solid food be introduced. Well-stewed tripe, rabbit, and pigs' and calves' feet are swallowed readily.

2. When solids can no longer be taken, a short tube should be introduced. This, when considerable dilatation has been effected, may be removed altogether from time to time, and the patient allowed to take solids. This form can be worn till the case terminates, unless pulmonary symptoms supervene, especially cough on swallowing.

3. When the passage of fluids can no longer be borne, then they must be withdrawn altogether from the gullet. This can be accomplished in two ways: (a) by the use of Krishaber's long tube; (b) by gastrostomy.

The duration of life after this stage has been reached will in no case be long, and it becomes a question of giving the patient the greatest amount of comfort. The experience of others as well as my own shows that long tubes may be worn till the termination of a case; and, as I believe, the ulceration will be avoided by using rubber tubes, and passing them by the nose. To this method I give my adhesion, rather than to gastrostomy. Those who have seen many cases know the difficulty that often arises from escape of the gastric juice, and that not a few have been fed into the peritoneum, while the operation, if done when the patient is in a depressed condition, is very likely to be unsuccessful, either from want of union or exhaustion. Other means are sufficient in the earlier stages.—*British Medical Journal*, April 23, 1887.

SPARTEINE, IN COMPARISON WITH DIGITALIS.—*STALSEL* has made extensive experiments in Vienna, and concludes as follows:

Sparteine, in doses of $\frac{1}{6}$, $\frac{1}{4}$, and $1\frac{1}{2}$ grains, produces the same results as digitalis, in somewhat less degree. It is not a pure diuretic. No ill after-effects were observed.

Digitalis is superior to sparteine in every respect. It is only when digitalis is not well borne, or when the newer drug can be used as an adjuvant to digitalis that it should be employed.—*Centralblatt für die Gesammte Therapie*, April, 1887.

TRANSVERSE SEPTA IN THE CERVIX UTERI.—*M. BUDIN* has recently published in the *Progrès Médical* an original article on incomplete transverse septa in the cervix uteri. In 1875 he discovered a diaphragm of this kind in a patient at the Maternité, Paris, during labor. She had already borne one child. M. Budin found the cervix completely effaced. On passing the finger over the foetal head, the edge of the septum could be plainly detected. The septum was well marked on the right side, and existed in front and behind, but appeared to be absent on the left side. Labor was normal. In 1879 Professor Depaul induced premature labor in a primipara, aged thirty, with a deformed pelvis. M. Budin detected, when the os was well dilated, a septum equally marked in all directions; it had a wide orifice, and appeared to be attached to the walls of the cervix

below the os internum. Labor was long, but the waters pushed the septum well downward, so that it did not appear to be the cause of the prolonged process of parturition. When the patient was convalescent the septum could be detected, but it was less marked than before. Müller detected a similar septum below the os internum in a single girl, aged twenty, subject to retroversion and menorrhagia. Breisky, in his notes, recorded a case of cervical septum in a woman, aged forty, also subject to menorrhagia. Bidder detected a septum in a primipara, aged twenty-six, during labor, as in Budin's cases; here, again, the septum was most developed on the right side. The pains were feeble, and the septum certainly obstructed labor. Its edge was incised, and the margin of the os externum was also incised; the os was then dilated, and a male child delivered with the aid of forceps. The septum seems to have disappeared after labor. Perhaps, Budin suggests, the left side of the septum had been destroyed in his case during the first labor. From notes supplied to him by the head midwife at the Maternité, there appear to have been seen in 1884 and 1886, in Professor Tarnier's wards, two cases of uterine septa. The first occurred in an instrumental labor, the termination of the patient's seventh pregnancy. The septum seemed to lie at the level of the os internum; it was very rigid, its orifice was minute, and its tissue contracted simultaneously with the uterine contractions. In the second case, a primipara, a septum with a very narrow orifice was detected nearly an inch above the os internum. The shoulder presented, and tore the septum. Turning was performed, and the child was delivered alive. The torn septum could be detected afterward. The true relation of the menorrhagia in some of the above cases of cervical septum is doubtful.—*Brit. Med. Journ.*, April 23, 1887.

AN INJECTION FOR BLENNORRHCEA.—

R.—Acid, tannic.	gr. 23.
Plumbi subacetat. (liquid)	m. 45.
Tinct. catechu	3jss.
Tinct. opii	m. 23.
Aqua rosea	3 12 $\frac{1}{2}$.
Aqua destillat.	33 $\frac{1}{2}$.—M.

Sig.—Inject morning and evening, and allow to remain in the urethra two or three minutes.—*L'Union Médicale*, April 11, 1887.

DOSAGE WITH CHILDREN.—BUTTIN gives the following table:

For children from

1 to 2 years,	$\frac{1}{10}$	the dose for adults.
2 to 5 "	$\frac{2}{10}$	"
5 to 7 "	$\frac{1}{5}$	"
8 to 10 "	$\frac{1}{3}$	"
11 to 13 "	$\frac{1}{2}$	"
14 to 16 "	$\frac{2}{3}$	"
17 to 19 "	$\frac{3}{4}$	"

For aged persons, between 65 and 80, $\frac{1}{2}$ the ordinary adult dose.—*Journal de Médecine*, April 10, 1887.

A POSTURAL THEORY OF PHthisis.—A theory advanced by G. W. HAMBLETON, of King's and Queen's College of Physicians, Ireland, is as follows:

Man, in a state of civilization, does not hold himself erect: he stoops more or less. The weight of his

shoulders is thrown on the thorax, and, consequently, the latter is impeded in its movement, and his chest is narrow. Man, in the uncivilized state, holds himself erect; the weight of his arms is borne by the spine; his chest is broad, well developed, and freely movable; and he passes the whole of his existence in active exercise in the open air. The trades and occupations that supply the greatest number of cases are those in which small particles of various substances are constantly inhaled, those that necessitate little movement or even a cramped position of the chest, and those where a considerable time is spent in small and badly ventilated rooms. In the army those who become phthisical are those who have a chest capacity below the average. In short, the conditions that produce consumption are those that reduce the capacity of the lungs below a certain point.

In support of this theory, Mr. Hambleton gives the results of some experimental investigations which he has made, in the form of the following propositions: 1. That artificially induced reduction of the breathing surface of the lungs below a certain point, together with the prevention of compensatory action of other organs, is followed by a local and general state not to be distinguished from consumption; 2. That arrest of this artificially induced reduction of the breathing surface of the lungs, together with induced compensatory action of other organs, is followed by relief of the prominent symptoms, and improvement of the general state; 3. That artificially induced full development of the breathing surface of the lungs is followed by an entire absence of all symptoms of disease, and by general good health.—*Science*, April 29, 1887.

THE CAUSES OF SUPPURATION.—A. ZUCKERMANN (*Centralbl. f. Bacteriologie u. Parasitenkunde*, No. 17) relates his experiments upon suppuration, which have led him to these conclusions:

That no chemical, mechanical, or thermic influences can excite suppuration if they are wholly free from microbes; and in cases where these causes apparently act it is probably through some pyogenic microbe. For substances chemically pure may be mycotoxically impure; thus some disinfectants are not always free from microbes. The varieties of microbe known to cause suppuration are *Staphylococcus pyogenes aureus*, *albus*, and *citreus*; *Streptococcus pyogenes*; and in fetid abscesses, *Bacillus pyogenes fetidus*. Inoculations with *staphylococcus* and *streptococcus* produce fatal results if injected in large amount into animals, or lead to suppuration if death do not occur. The pyogenic microbes must have a very general distribution in nature; they may enter the body through the air-passages, the intestinal canal, and especially the skin, and by means of small wounds or the orifices of the cutaneous glands. *Staphylococcus* is more frequent than the *streptococcus pyogenes*.—*Lancet*, April 30, 1887.

PROGNOSTIC VALUE OF SUDAMINA IN TYPHOID FEVER.—BARADAT and LACASE give the following conclusions in an article in the *Revue de Médecine* for April 10, 1887:

Sudamina appearing at the commencement of the second week of typhoid fever have no value in prognosis. Sudamina appearing after the second week announce the approach of convalescence.

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SATURDAY, MAY 28, 1887.

COLD IN THE TREATMENT OF LOCALIZED NEURALGIAS.

THE many and various methods which have been introduced for the relief of this most painful and annoying affection, particularly when occurring in nerves situated in superficial regions, have none of them, unfortunately, brought the widespread and permanent relief for which their originators hoped. Although the discovery of a cure for all neuralgias is probably an impossibility, owing to their many causes, it is perhaps fortunate that the physician has so large a number of therapeutical resources, since he can always tell the sufferer of the cures which still another remedy has effected.

Almost all the remedies which have been used locally for this affection have belonged to one of two classes, namely, counter-irritants and sensory nerve paralyzants. Lately, however, extreme cold has been tried with no small degree of success, and although its use is by no means novel, it may be of interest to call attention to the results obtained.

Early in April of the present year M. DEBOVE reported to the Société Médicale des Hôpitaux no less than one hundred and sixty-eight cases treated in this manner, of which one hundred and fifty were cases of neuralgia of the sciatic nerve. His results are even startling in their success, and if further experiments show that they are to be relied upon, a remedial measure of great value in such cases is given to the profession, for in only ten cases did relief fail to appear, while in the treatment of eighteen cases of facial neuralgia, but two were unsuccessful, notwithstanding the fact that several of them had heretofore proved most intractable. Thus he mentions the case of a woman who had suffered for years with neuralgia of the face, and who had

submitted to section of the nerve no less than three times, in whom these cold applications effected a cure in two months.

M. Debove, after stating that he had used the chloride of methyl in the form of a spray for the purpose of lowering the temperature of the area involved, proceeds to warn us against the discolored skin which sometimes follows its use, and insists that the surface and not the deep parts should be treated. It seems probable that the cold must act in quite a different manner in the case of neuralgia of the sciatic and of any of the facial nerves, since in the one case the nerve fibre is much more deeply buried than in the other, so that while the facial nerves are directly acted on by the cold, the sciatic is only affected by the increase or decrease of blood and warmth in its immediate neighborhood.

CHOLERA IN PREGNANCY.

A VERY interesting memoir upon this subject by QUEIREL, of Marseilles, was recently presented to the Paris Academy of Medicine by Charpentier, and an abstract of it is found in the *Archives de Toxicologie* of March 30th. It is founded upon sixty-seven cases, of cholera occurring in pregnant women in the last epidemic of the disease, thirty-nine of which were observed by the author, and our readers will be interested in some of the important facts he notes.

Of the sixty-seven cases, thirty-nine died, and twenty-eight recovered; twenty-nine of the sixty-seven aborted or had premature labor. Previous statistics have shown that interruption of pregnancy is rather more favorable for recovery than its continuance; but the figures of Queirel indicate the reverse, the mortality of women who did not abort or have premature labor, being only forty-three per cent., while that of those in which one or the other of these accidents occurred was seventy per cent. The cases of premature labor gave the number of twenty children born alive, but most of these died soon after birth.

Queirel, in considering the causes of the arrest of pregnancy, discusses the following hypotheses: reflex action, uterine cramps corresponding to those of the limbs, toxæmia, and disturbances in the foeto-placental circulation. He regards it as probable that each is efficient in arresting the pregnancy. In some cases the uterine action appears to occur without the consciousness of the patient; the tissues seem to present no resistance, the neck and the perineum yielding at once, and the ovum is expelled entire. A remarkable fact is observed in these cases, and that is the striking diminution of the amniotic liquor, the loss of fluid corresponding with that in the mother's tissues. The depressing influences of the diarrhoea, and especially of the vomiting, facilitate the occurrence of abortion. Cramps of the

uterine muscular tissues are assisted by those of the muscles of the abdomen in expelling the ovum.

A hemorrhagic endometritis has been regarded in cholera, as well as in some other diseases, as a cause of abortion. But Queirel has never found, either in abortions or in premature labors occurring in cholera, any proof of this; on the contrary, there have been no hemorrhages, even in cases where there was uterine inertia. He does, however, attribute very great importance to the condition of the blood; it is less fluid and it is loaded with carbonic acid, and, hence, premature uterine contractions occur. Further, not only does the maternal blood, under such circumstances, fail to furnish oxygen, but it subtracts it from the foetal blood, and, hence, the foetus dies before the mother.

The question of pyrexia as a cause of the death of the foetus and consequent abortion is considered. Until quite recently it has been held that, as the foetus has a slightly higher temperature than the mother, should her temperature be for some time greatly increased, the child perishes. But in 1883, Charpentier, assisted by Doléris and Doré arrived at very different results from those obtained by German observers, whose experiments were regarded as establishing this statement; it was proved that a hyperthermia gradually produced had no such injurious effect upon the foetus, and this conclusion has been confirmed by experiments made by Runge and Preyer. Nevertheless, we observe that in the most recent German work upon obstetrics, that of Zweifel, the author gives as the causes of death hyperthermia and asphyxia. Queirel finds the cause of death, as observed by Charpentier, the same as that in syphilis, variola, scarlatina, rubeola, erysipelas, typhoid fever, and toxæmia. "This has the chief rôle; hyperthermia, when present, acts only an accessory part."

Such is a brief presentation of the results of Queirel's observations of cholera affecting pregnant women.

THE USE OF ANTIPYRIN FOR THE PURPOSE OF RELIEVING PAIN.

WITHIN the last few years the so-called coal-tar group has been worked over so thoroughly that we have already at our disposal no small number of drugs which we constantly use at the bedside for the purpose of reducing temperature, and notwithstanding the fact that these substances have become well-nigh absolute necessities as antipyretics, recent observations point to their use in many other directions. Quite recently GERMAIN SÉE, in *L'Union Médicale*, for April 26, 1887, has recommended antipyrin as an analgesic, and has obtained results from its use in such a number of cases of severe pain that his experience deserves notice.

After discussing the use of antipyrin in the pain

associated with gouty and rheumatic lesions in the joints, he proceeds to record observations of alleviation of severe suffering in headache, facial neuralgia, obstinate migraine, and even in neuritis, including in the list not only those symptoms dependent on gouty and rheumatic tendencies, but also almost every painful affection, be its cause what it may, such as lumbago in all its forms, neuritis occurring in diabetes and from injuries, and muscular rheumatism; the greater number of cases consisting, however, in disorder of the peripheral nervous apparatus rather than the centric. While Sée is perhaps the first observer who has used antipyrin on such an extended scale for this purpose, it should not be forgotten that others have preceded him in more limited lines of clinical experiment, among whom may be noted Ungar and Martin, who have reported very favorable results from its use in sciatica.

As is often the case, clinical experience leads one to direct experiment, and under the direction of Sée, his chief laboratory assistant GLEY confirmed the analgesic action of the drug by experiment on the dog, in which they found that doses of about thirty grains produced lessened reflex activity, numbing of the receptive and perceptive centres, and sensory nerves, without influencing either the cardiac rhythm or the respiration. The general circulatory system remained unaffected, and, if the temperature of the animal was normal, no change took place in its bodily heat.

Some of the experiments of Sée and of Gley, have been confirmed in this country, and there exists no doubt that antipyrin can be used as an analgesic without any fear of untoward effects on organs which we are accustomed to regard as vital. While conservatism tends to make us doubtful as to the power of the drug to produce the results which are claimed, the eminence of the authorities named is sufficient guarantee to induce the practitioner to give it trial, since the physician who possesses a large number of "pain-killers" is sure of professional success.

GAVAGE OF THE NEWBORN.

GAVAGE was first employed by Tarnier in the case of infants born prematurely; and it is recommended, also, for those who, though born at term, suffer from coryza, or who have just been operated upon for harelip, the former not being able to nurse, while in the latter the movements made in sucking interfere with primary union. In the *Archives de Tocologie* for March 30th, we find a description of the method of gavage advised by BAR.

Human milk is, of course, preferable, and next that of the ass. But instead of these cow's milk may be used, prepared according to the following method advised by Tarnier. One part of sugar is added to

twenty parts of water, and this is added to cow's milk in the proportion of three to one. The mixture is kept in boiling water for half an hour; then the sterilized liquid is decanted, and placed in a suitable vessel of glass or of porcelain.

The simplest form of apparatus, advised by Bar, for administering this food to the infant is composed of a glass funnel to which a sound (No. 14), or a rubber-tube of the same diameter, but twice as long, is attached. The funnel and tube being filled, pressure is made upon the tube just below its attachment to the funnel, in order to prevent the escape through the lower end. The infant is placed in the lap of a nurse, the head moderately extended, and the physician holding the apparatus in his left hand, takes the free end of the tube in his right hand and, after moistening it, passes it into the back part of the throat, and thence by gentle pressure into the oesophagus; when about six inches of the tube have passed the lips the end is in the stomach, and the compression of the tube is stopped, and the liquid passes simply by gravitation into the stomach. The tube should be removed immediately after the funnel is emptied, in order to prevent regurgitation; the quantity of nourishment used should be, if the infant is very small, only two or three drachms, and in that case the gavage should be repeated every hour. Fermentation of the nutritious mixture should be prevented by the proper preparation of the latter, by washing out the apparatus with a one per cent. solution of boric acid, and by keeping the apparatus in the intervals between its employment in a similar solution.

The results of this treatment have been so satisfactory in Paris—many infants having been saved by it that would otherwise have perished—that it is worthy of a more extensive trial.

PRACTICAL RESULTS IN RESTRICTING DIPHTHERIA.

BEARING on the communicability of diphtheria and the practicability of its restriction, DR. H. B. BAKER presented at the recent meeting of the Michigan State Medical Society, at Lansing, a table and a diagram based on a compilation of reports by local health officers in Michigan for the year 1886, exhibiting the results of isolation and disinfection in outbreaks of diphtheria.

In the 102 outbreaks where isolation or disinfection or both were neglected, the average *cases* per outbreak were a little over 16, and the average *deaths* were 3.23; while in the 116 outbreaks in which isolation and disinfection were both enforced, the average *cases* per outbreak were 2.86 and the average *deaths* were 0.66; indicating a saving of over 13 cases, and 2.57 deaths per outbreak, or 1545 cases and 298 deaths during the year, by isolation and disinfection in the 116 outbreaks, com-

pared with those in which little or nothing was done.

DR. F. P. HENRY, of Philadelphia, has been elected a Corresponding Member of the Royal Academy of Medicine of Rome.

THE profession will learn with regret of the death of Thomas F. Rochester, M.D., Professor of Medicine in the University of Buffalo, which sad event occurred on Tuesday, the result of Bright's disease. Dr. Rochester was born in Rochester, N. Y., in 1823, received a liberal education and graduated in medicine at the University of Pennsylvania in 1848. After study in Europe he began practice in New York, in 1851, but two years later removed to Buffalo and accepted a professorship in the University of Buffalo. He was held in the highest esteem by all who knew him, and he occupied many positions of honor and trust. In 1875 he was elected President of the New York State Medical Society.

DR. EDMOND FELIX ALFRED VULPIAN, Dean of the Faculty of the French Academy of Medicine, died in Paris on May 18th, in the sixty-first year of his age. He was born in 1826, and received his degree in 1854. He was attached to the Museum of Natural History, and made nervous diseases a study. In 1867 he was appointed Professor of Pathological Anatomy at the Faculté de Médecine, and his lectures from this chair created something of a sensation, bringing on him the charge of teaching materialism and atheism. Dr. Vulpian was elected a member of the Academy of Sciences in 1876. He published a number of medical works, the two best known being *The Physiology of the Nervous System* and *Diseases of the Nervous System*.

SOCIETY PROCEEDINGS.

ASSOCIATION OF GENITO-URINARY SURGEONS.

First Annual Meeting, held at the Laurel House, Lakewood House, Lakewood, N. J., May 17 and 18, 1887.

TUESDAY, MAY 17TH—MORNING SESSION.

The meeting was called to order at 11.30 A.M., by the TEMPORARY CHAIRMAN, DR. E. L. KEYES. In his

ADDRESS OF WELCOME,

he first alluded to the circumstances which had led to the formation of the Association. Then, speaking of its objects, he said, he need not enter into the question of specialism as distinguished from general medicine and surgery. That distinction was being made for us by the circumstances of the times. The concentration of labor certainly yielded more perfect results than its general distribution. There was a field ready and those who wished might enter in and work. Because a man be-

longed to this Association it did not imply that he at all confined his ability to its peculiar line of study; but it furnished to him an arena in which he might develop his ideas and display the work he had done under the keen criticism of minds familiar with the subject matter treated, and capable of still further refining, by their discussion, the quality of his work and enhancing its value.

DR. F. B. GREENOUGH, of Boston, then presented

A FEW STATISTICS ON THE COMPARATIVE FREQUENCY OF THE CHANCRID.

He referred to the marked individuality that was given to the chancroid by the text-books, in spite of which the great difference in the statistics by different observers would show that they must have used a different system of classification. Throughout this divergence of statistics, however, two facts appeared: First, that this lesion had diminished in its relative frequency to the true chancre, with the exception of two periods in Paris, that is, during the war and siege (1870-1871), and during the exposition (1875), and that it occurred more frequently in hospital than in private practice. Dr. Greenough's records at the Boston Dispensary, from July 1, 1873, to March 31, 1887, gave a total of 1593 cases, of which 391 were chancroids, 219 true chancres, 931 doubtful, and 52 cases of herpes progenitalis; making the chancroid stand in proportion to other lesions in the ratio of one to three. These records were not satisfactory, as they showed only the diagnosis made at the time of the first visit. In private practice, out of 100 cases seen, 10 were chancroids, 63 were true chancres, 13 were doubtful, and 14 were herpes progenitalis, being a ratio of one to ten. The diagnosis in these cases was much more reliable. Both sets of cases showed diminution in the frequency of chancroid. The author thought this was due in part to a change in the type of the disease, and a change in the severity of the cutaneous manifestations in syphilis. Herpes progenitalis not having been recognized by earlier writers, was undoubtedly often mistaken for chancroid, and probably, also, a not uncommon inflammation of a sebaceous follicle on the shaft of the penis, and the treatment of either of these lesions by cauterization, universally practised at that time, would make a very good imitation of a chancroid. The fact that the chancroid had just been recognized and described as a local venereal sore, distinct from the chancre, would make it largely sought for at that time.

Dr. Greenough thought that at the present day a virulent bubo was not more frequently seen in connection with a chancroid than with a true chancre, which he considered was due partly to the fact that this lesion was not so frequently irritated by caustics, and he also ascribed the greater variety of the chancroid to the fact that they were no longer manufactured by cauterizing every venereal sore that was not a typical true chancre.

DR. F. R. STURGIS said that according to his observation in the Charity Hospital and Dispensary (New York) practice, the number of cases of chancroid compared with those of chancre, were diminishing.

DR. R. W. TAYLOR, DR. HYDE, DR. MORROW, and DR. ROCKWELL, had observed a diminution in the relative frequency of chancroid to chancre.

DR. HYDE thought the need of time in which to form

an opinion, whether a given lesion would or would not be followed by the manifestations of syphilis, should be more generally recognized.

DR. OTIS did not agree in so general a condemnation of the cautery; when used early it was of benefit, used late it might do harm.

THE CHAIRMAN agreed in the remarks made regarding statistics. But he expressed his belief in the virulence of chancroidal pus as compared with ordinary pus. He agreed with Dr. Otis that cauterization of virulent sores within the first ten days is good practice.

THE PRESIDENT read a paper entitled

SUPRAPUBIC CYSTOTOMY FOR VESICAL TUMORS AND LARGE CALCULUS; A RECORD OF THREE CONSECUTIVE SUCCESSFUL CASES, WITH COMMENTS UPON VESICAL SUTURE AND A SUGGESTION FOR DRAINAGE.

He advocated suprapubic cystotomy for vesical tumors, for certain foreign bodies, in cases of very large stone, and in certain exceptional instances for exploration. The method should not be adopted as the usual one in stone. He gave statistics showing that it was especially objectionable in children. He had operated for the relief of large fibro-papilloma, for flat villous growth, and for a large calculus. He described his way of dealing with hemorrhage and of applying the vesical suture. A double curved retractor was exhibited, and a description given of his method of effecting perineal drainage by puncture, probe, and catheter, making only a small perineal incision. The drainage is considered by Dr. Keyes, a most essential step in the operation, and the one feature which makes vesical suture safe and likely to be generally effective; while drainage in the perineum avoids one of the discomforts of suprapubic section, namely, obstinate fistule. He prepares a No. 30 French red rubber catheter by passing a string through it, the string being knotted inside the tip. This he passes by means of a long probe inserted through a puncture made upon a broadly grooved staff, and by aid of a finger in the rectum, thus entering the draining catheter through a hole only just as large as itself.

DR. A. T. CABOT, of Boston, reported

A CASE OF HYSTERECTOMY FOR THE RELIEF OF PYELITIS FROM OBSTRUCTION,

and referred first to a case in which an operation was not performed. The patient died, and the autopsy revealed the fact that the symptoms of obstruction of the ureters which came on late in the history of the fibroid were probably due to settling of the fibroid in the pelvis and contraction of former adhesions while it was in that position. In the case which was made the basis of the paper the pyelitis occurred as an early symptom while removal of the pelvic tumor was possible. A second tumor the size of an orange was felt near the umbilicus, thought to be probably attached by pedicle to the one, the size of a child's head, projecting deeply into Douglas's pouch. Later the condition of the urine and the character of micturition, pain, etc., pointed to cystitis from pressure. Two weeks later the symptoms were those of probable suppuration in one or both tumors. The smaller abdominal tumor was removed, after which micturition was less frequent, but the appearance of pus in the urine and other symptoms pointed to pyelitis, the condition of the kidney being considered due to

pressure of the pelvic tumor. At an operation for its removal it was with difficulty that it could be pushed up into the abdominal cavity, so tightly was it wedged in the pelvis. The adhesions were not important. The uterus was removed with the tumor, only a part of the cervix being left. The patient rapidly regained strength, and wished to return to work. The urine had become almost clear.

DR. GEORGE CHISMORE, of San Francisco, forwarded a paper entitled

SOME CASES OF PYELITIS IN WHICH FREQUENT AND PAINFUL MICTURITION WAS THE CHIEF SYMPTOM.

Two cases in particular were cited to call attention to the fact noted in the books but not sufficiently emphasized, namely, that frequent and painful micturition might be so pronounced a symptom in pyelitis as to mislead the experienced observer as to the nature of the case, and cause him to address treatment to the bladder alone while the real malady was in the kidneys. In one of his cases in which frequent and painful micturition was the chief symptom the man had sustained a violent muscular strain in the region of the kidney, and for some years afterward suffered in the extreme, and was treated for cystitis by some of the most distinguished specialists; but finally the abscess of the kidney discharged and the patient recovered.

In the second case treatment was directed to presumable cystitis, and at the autopsy the kidney was found riddled with abscesses. He asked, how many times has the healthy bladder been subjected to every variety of persistent treatment while disease of the kidneys has gone on, only shown to be present by post mortem examination? He believed that in many cases the diagnosis of pyelitis could be made only by exclusion.

EVENING SESSION.

DR. J. H. BRINTON, of Philadelphia, read a paper on

HORNY GROWTH OF THE PENIS,

which will appear in full in an early number of **THE MEDICAL NEWS**.

DR. CABOT had seen a horn perhaps the size of the thumb nail occupying the dorsum of the glans penis in a patient of Dr. Bigelow's about twelve years ago. He could not say whether it had been reported.

DR. J. P. BRYSON, of St. Louis, then read a paper on

THE CHOICE OF OPERATION FOR THE REMOVAL OF VESICAL CALCULUS IN CASES COMPLICATED BY PROSTATIC OBSTRUCTION.

It seemed strange, he thought, how little influence prostatic enlargement has upon the cutting or crushing operation for stone in the bladder. He believed that very rarely is section made purely for prostatic reasons, that is, with the intention not only of removing the stone, but for reducing the size of the prostate as well, and thus reducing in intensity at least, the causes which are most active in the production of stone as well as lessening the sufferings of the patient in after years. Since 1884 he had operated for stone by pre-rectal section in four cases, all complicated by a large hypertrophied prostate gland, and had had opportunity to observe one other similar case in the practice of a friend. The age of the patients varied from sixty-five

to seventy-four years. The operation in each case was successful. In one of his cases he had occasion again to make an incision and enter the tip of his finger, having failed at the first operation to evacuate entirely all the fragments; in two others opportunity to re-measure the size of the prostate was offered during an operation for return of the stone. In one case he estimated the reduction in size of the prostate after the first operation to have been about one-third in its length, and in the other about one-fourth; in none was there now any residual urine of importance. He did not believe that any other operation for removal of the stone would have been attended by so marked reduction in the size of the enlarged prostate.

THE PRESIDENT remarked that while the success of the cutting operation in the case reported by Dr. Bryson as occurring in old people, had been all that one could ask, yet this operation was shown by statistics to have a much larger mortality in the aged than litholapaxy. Whatever the effect of the cutting operation upon the size of the prostate, he thought we should do the crushing operation first if it were practicable, as it was much less dangerous, and if it failed to relieve the symptoms to consider afterward the propriety of any other procedure.

DR. BRYSON said that in none of his cases was the cutting operation the operation of choice. The effect upon the prostate having been noticed, he thought it was worthy of consideration. The discussion was participated in by Drs. Otis and Cabot.

DR. P. A. MORROW read a paper on

IDIOSYNCRASY AS AFFECTING THE SPECIFIC TREATMENT OF SYPHILIS.

He first referred to the ample justification of the claims of mercury and iodide of potassium to be ranked as "specifics" in the treatment of syphilis. These agents when introduced into the organism, directly attack and cause to disappear the organic lesions as well as the functional disorders created by the syphilitic virus. Experience shows, however, that the action of these drugs is by no means constant and infallible—all syphilitics are not equally susceptible to this curative action. The definite peculiarities of constitution which are generally included in the term idiosyncrasy exert a dominant influence in modifying drug action. The therapeutic action of specific remedies is especially subordinated to conditions of aptitude inherent in the individual.

Idiosyncrasy in relation to the action of mercury and iodide of potassium may be manifest in various modes and degrees of intensity:

1. In an abnormal susceptibility to their physiological or toxic effects.
2. In the production of incidental ill effects which may be associated with the drug's physiological action, or may take the place of it, constituting an aberration of the drug's typical mode of action.
3. In an insensibility or failure on the part of the system to respond to the curative action of these drugs.

Various clinical examples were given illustrating the foregoing propositions, particularly cases of idiosyncrasy against the iodide so marked that the local and constitutional disorders caused by the drug surpassed

in severity the symptoms of the disease itself. In one case under recent observation, ordinary medicinal doses of the iodide repeatedly caused a multiform eruption consisting of pustular, bullous, nodular, and keloidal lesions, attended with the most pronounced symptoms of constitutional "iodism." The specific lesions were much aggravated under its use.

The various expedients which have been recommended to secure tolerance of these drugs by counteracting their ill effects were enumerated in detail, and their comparative value considered.

In conclusion he suggested that the practical significance of idiosyncrasy and its bearing upon treatment had not received from specialists the consideration its importance demands. The rules of treatment had been rigorously and mathematically formulated—so many months of mercury, and after a certain date recourse to the iodide of potassium without reference to the immense variance in the constitution and idiosyncrasies of patients, not only in the toleration of those drugs, but in susceptibility to their curative action.

DR. R. W. TAYLOR, of New York, presented some OBSERVATIONS ON THE USE OF OIL OF WINTERGREEN IN TREATMENT OF GONORRHEAL RHEUMATISM,

and detailed the histories of about twenty cases of gonorrhœal rheumatism occurring in the Charity Hospital the past year, in which he had given the oil of wintergreen a thorough trial. In about nine of the cases the disease was of that chronic kind, in old or neglected subjects, in whom no treatment could prove of much benefit. In the others the benefit was marked, and most of them after some weeks recovered entirely. The drug was administered in capsules in pretty large doses, varying according to the circumstances. The urethral secretion also became bland under the action of the drug, and disappeared. Other remedies had in most cases been tried with little or no effect.

DR. ALGERNON S. GARNET then made

A FEW PRACTICAL OBSERVATIONS ON THE TREATMENT OF LATE NEOPLASMS OF SYPHILIS.

He thought it an error to give fixed doses, especially in the later stages of syphilis, without due regard to the nature of the case. He believed in removing neoplasms, slight or grave, and considered no patient safe as long as there was the slightest evidence of the disease. The iodide of potassium or mercury should be pushed in every stage of syphilis as far as it could be borne. If cachexia in the later stage prevented the free use of mercury, tolerance of the drug must be cultivated until the patient could be put under its full influence. Syphilis, he thought, is not a benign disease at all.

WEDNESDAY, MAY 18TH—MORNING SESSION.

The Society went into an election for

OFFICERS FOR THE ENSUING YEAR,

resulting in the choice of Dr. E. L. Keyes as *President*, and Dr. R. W. Taylor, *Secretary and Treasurer*.

DR. F. N. OTIS read a paper on

TEMPORARY OVERSTRAIN OF THE BLADDER PRODUCING CHRONIC RETENTION OF URINE.

He introduced his subject by defining the usual causes and varieties of atony of the bladder. He called especial

attention to that form recognized as occasionally resulting from sudden overstrain through even a single attack of retention, particularly when it occurred independent of any organic obstruction, but probably as a result of reflex irritation caused by a contracted meatus urinarius, or urethral stricture of large calibre. Such reflex trouble might, however, arise from the irritation of hemorrhoids, or it might be caused through temporary loss of consciousness, or any nervous shock, or from sexual excess. However caused, he claimed that a single retention of urine from any cause might, within a few hours, produce such an overstrain of the muscular structures of the bladder as to necessitate in some cases the use of the catheter during the remainder of the patient's life. Several cases were cited in proof of the occurrence of acute retention from reflex causes, which were promptly and permanently relieved by division of a urethral contraction. Illustrative cases were given; in none of these was there any prostatic enlargement or close stricture, nor general atrophy of the bladder. From this fact Dr. Otis assumed that the overstrain had been local, chiefly in that portion concerned in opening the vesical orifice. The portion thus weakened was unable to overcome the resistance of the muscular structure of the so-called vesical sphincter.

DR. J. N. HYDE, of Chicago, read a paper on

EARLY SYPHILITIC EPIDIDYMITIS.

He cited cases which had come under his observation with a view of presenting the negative side of the subject. The following propositions, he thought, rested on fairly sound clinical grounds: 1. A male patient may suffer from blennorrhagic epididymitis on one side, subsequently contract syphilis, yet escape syphilitic involvement of the epididymis. 2. A male patient may suffer from blennorrhagic epididymitis involving first one organ, then the other, finally acquire syphilis and escape syphilitic epididymitis. 3. A male patient may suffer from blennorrhagic epididymitis of one or both organs, become so irritable as to exhibit by inflammatory accidents sympathy with successive blennorrhagic attacks, yet throughout a final syphilis betray no sensitiveness to the last-named disease. 4. A male patient affected at the same time with syphilis and blennorrhœa may suffer from an epididymitis, evidently a complication of the last-mentioned disease, namely, blennorrhœa, and yet escape syphilitic involvement of the organ. 5. A male patient may suffer from tuberculosis, subsequently incur syphilis, yet the epididymis escape involvement. 6. A male patient who has suffered from repeated attacks of blennorrhœa, and that lately, may exhibit the typical form of early syphilitic epididymitis.

DR. A. T. CABOT, of Boston, reported two cases of

PROSTATOTOMY FOR OBSTRUCTION.

In one the operation was followed by almost complete recovery of the function of the bladder. In this case litholapaxy was done on the stone before the operation of prostatotomy. In the other case, although the first result of the operation was satisfactory, a certain amount of incontinence appeared some months later. Dr. Cabot ascribed this to the hypertrophied condition of the bladder, which was sufficient to overcome the constrictor muscle, weakened as a result of the incision into the membranous urethra. He queried whether in a case

like this, with good evidence of a hypertrophied bladder, and in which the obstruction was a narrow bar, the internal prostatotomy of Mercier might not prove the better operation.

DR. KEYES then read

A PLEA FOR THE MORE GENERAL USE OF THE NITRATE OF SILVER IN THE DEEP URETHRA,

and presented an instrument for injecting the deep urethra, which he believed was more suitable and more serviceable than other syringes in general use. His method is to deposit three to five minims of a watery solution of the nitrate of silver of a strength varying from one to forty-eight grains in the ounce very accurately in the centre of the membranous urethra, placing it there by the use of an instrument open at its tip. He thinks the method is not suitable in cancer, tubercle, or when the deep urethral symptoms are due to considerable periurethral inflammation, but most beneficial for inflammatory and neurotic surface disturbances of the deep urethra and neck of the bladder. He gave illustrative cases of cure of gonorrhœal cystitis, relapsing epididymitis, vesical irritability, prostatorrhœa, etc.

In the full discussion of the paper which followed, most of the members expressed hopes of better results from the deep urethral injections of nitrate of silver than had hitherto been generally attained.

DR. J. H. BRINTON was one of the strongest advocates of this method, which he had practised extensively. To relieve the discomfort or pain which the patient experienced after treatment by this or other methods, he had the patient stand by the basin and allow a small stream of water run over the corona of the penis; the relief was almost immediate.

DR. MASTIN referred to the practice of Prof. Richardson, consisting in injecting a drachm of almost a saturated solution of nitrate of silver into the bladder in gonorrhœa and chronic cystitis.

DR. R. W. TAYLOR, of New York, read a paper on

A RARE FORM OF SEPTICÆMIA FOLLOWING INTERNAL URETHROTOMY.

The operation was performed in 1878 by a colleague, and the case was seen by Dr. Taylor in consultation. The occurrence of the accident, complicating urethrotomy, is unique in medical literature, and this consideration, together with the fact that the form of septicæmia is little known and only indifferently described by English and American writers, prompted the preparation of the paper. The patient was a perfectly healthy man, aged twenty-eight, who had a tight stricture of the bulbomembranous junction, which was incised by means of Maisonneuve's instrument. The operation was performed with all care. Within twenty-four hours severe pain attacked the perineal region, and soon a reddish, boggy appearance was observed. Then the inflammatory action extended, and presented marked features. The integument became œdematosus, and a distinct emphysematous crackling was felt when pressure was made on the parts. As this rapidly extended, large brown patches of skin developed, which felt as hard as the rind of ham. Beside these there were large ecchymotic spots and deep blue-black lines which were caused by congestion and destruction of the veins. This condition extended over the whole body, which during life

was much enlarged by the œdema and gas in the subcutaneous tissue, and after death the body became rapidly swollen beyond recognition and to fully twice its normal size, and was a deep purple, gangrenous mass, covered with large bullæ, and emitting a horrible stench. Death took place eighty-seven hours after the operation. The subjective symptoms were rapid pulse, tremulous action of the heart, progressive and distressing dyspœa, intense restlessness, utter agony and despair. The temperature at first rose, then fell below normal.

The disease was not accurately known until 1870, although many cases of it had been reported, particularly as occurring in the army, navy, and crowded hospitals. The cases were mostly epidemic. It started on the limbs generally, most frequently on the legs. It had been called many names, but Dr. Taylor referred the one proposed by Mollière, *septicæmie gazeuse foudroyante*.

Reasons were given in support of the view that the disease caused by a specific septic microbe. The only treatment is thorough amputation of the part in which the septicæmia begins, if that is practicable.

DR. R. W. TAYLOR, of New York, then exhibited

SECTIONS OF TUBERCULAR TESTES WITH BACILLI, AND THE COEXISTENT BACILLI IN THE SPUTA.

The Association then adjourned to meet next year, time and place to be announced hereafter.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, Washington, D. C., May 11, 12, and 13, 1887.

(Specially reported for THE MEDICAL NEWS.)

THURSDAY, MAY 11TH.—AFTERNOON SESSION.

(Continued from page 584.)

DR. J. COLLINS WARREN read a paper on *A Study of the Process of Repair after Resection of the Intestine, and Some of the Complications which may Occur.*

DR. J. E. MICHAEL then reported

A CASE OF VENTRAL HERNIA SUCCESSFULLY TREATED BY OPERATION, WITH A SUGGESTION AS TO THE METHOD OF OPERATING.

Mrs. F., a stout, robust woman, æt. fifty-five, fell several years ago while engaged in some domestic duties, in such a way that she was struck in the median line about half way between the umbilicus and pubes by the handle of a wash tub. The wound caused a break in the linea alba without breaking the skin, and soon afterward the intestine protruded. No peritonitis followed the injury. Her physician directed her to wear a bandage and pad to keep the intestine within the abdominal cavity, but the arrangement proved unsatisfactory, in that, upon the slightest exertion, even that of walking, the intestines protruded and, getting between the pad and belly-wall, occasioned a great deal of discomfort. Various other appliances were tried by other physicians, but none of them proved efficient. When she came under his care, the return of the protrusion was easy enough, inasmuch as, upon assuming the recumbent posture, the intestine returned almost entirely into the abdominal cavity. The belly was full and fat, but the opening in the abdominal wall was easily recog-

nized. It was elliptical in shape, with the long axis parallel to that of the abdomen, and, apparently, about two and one-half inches in length, and presenting a firm, hard, apparently cicatricial margin.

He was forced to operate, as the patient would hear of no other plan of treatment. This he did on March 15, 1886, with the aid of ether. The room and all articles to come into contact with the patient were thoroughly fumigated with chlorine gas and sulphur, and the anti-septic plan was employed. A long, free incision was made through the skin and subcutaneous fat, exposing the ring. Stout silver wires were passed through the ring a little less than a half inch from each other, and having a hold of about three-fourths of an inch. The wires were twisted over shot and the abdominal opening was closed. No shock occurred; no fever of consequence, and the patient made a good recovery. A bandage was worn for a few months after the operation, when the patient laid it aside.

In conclusion he said that he based his operation upon the fact that a firm cicatricial band of fibrous tissue is formed around foreign bodies which are lodged in the tissues of the body, and that, although so far as he was aware he was without precedent or authority in the operation, he had assumed that if he placed silver wires in the tissues in this manner, the fibrous tissue which would enclose them would be sufficient to close the hernial ring.

DR. T. F. PREWITT thought the operation had been admirably done. The cure was doubtless as supposed, owing to the large amount of new tissue which was thrown out, causing a thickening and strengthening of the ring. This is in fact the method by which charlatans profess to cure hernias in general. The result may be satisfactory, but there is danger that, sometime in the future, it may give away again.

DR. S. W. GROSS then presented a paper on *The Prognosis of Sarcomata of the Breast*, which will appear in full in *The American Journal of the Medical Sciences* for July.

DR. D. HAYES AGNEW read a paper entitled

THE MEDICO-LEGAL ASPECT OF CRANIAL AND HEART WOUNDS.

(See THE MEDICAL NEWS, May 21, page 561).

DR. L. McLANE TIFFANY thought there could be no doubt of the ability of an individual to shoot himself, either through the head and afterward through the heart, as asserted, or through the heart first and afterward through the head. He had seen cases both where the head was severely wounded without producing death, and where large wounds of the heart were present without destroying life. There are, however, many things besides anatomical conditions to be considered in the case of a suicide. First of these is the presence of powder marks. Nothing was said in the paper about the individual having these marks about his person. Next, could a man point a pistol in the direction that it would go from apex to base, as described here, assuming that he were right-handed? The simple description of the anatomical points of the post-mortem is but a small part to be considered. It is extremely rare that a right-handed man shoots himself in the left side of the body. In conclusion, he recalled the case narrated in *Taylor's Jurisprudence*, in which a double-barrelled

shotgun was accidentally discharged, the first load striking the individual in the chest, the recoil causing the remaining load to be discharged into his back.

DR. JOHN B. ROBERTS reported the case of a man who had shot two bullets into his head and afterward shot himself in the left side. In regard to the possibility of a man's shooting himself in the heart first and the head afterward, he agreed with Dr. Tiffany. He referred also to a paper read by himself before the College of Physicians of Philadelphia, in 1883, in which he called attention to the experiments of Dr. Block, tending to show that the heart may be sutured in cases of penetrating wounds.

DR. E. M. MOORE thought that none of the members would be seduced into very readily permitting a man to be buried as a suicide under such circumstances, for although possible, such shooting is exceedingly unlikely to occur. He had seen a number of cases in which suicide had been attempted by passing a very small bullet into the brain; all were attended by immediate or almost immediate unconsciousness. The general condition, the shock, the hemorrhage, or the attendant conditions of mind are usually sufficient to produce unconsciousness, so that while it certainly is possible for a man to inflict the second injury referred to, it is certainly very improbable.

DR. M. H. RICHARDSON, of Boston, stated by invitation, that he had been one of the "experts" referred to by Dr. Agnew. He desired to testify more fully than the author of the paper had been able to do, what had occurred at the trial. Of the physicians who testified, two local physicians asserted most positively that the supposition was not possible. There was no cross-examination at the trial, and no opportunity of bringing out more fully what was desired. He thought that Dr. Agnew if he had had an opportunity, would have testified exactly as he and Dr. Draper had done. The question was not whether these two wounds could both have been inflicted during the life of the individual, or the witnesses would have testified just as has been done here to-day. The question was rather whether this individual could have inflicted both wounds himself. The bullet entered the skull about two inches above the external auditory meatus on the right side and passed out near the occiput. A ball passing through this part of the brain, if it could have been self-inflicted, would almost certainly have produced immediate unconsciousness; and another fact upon which the opinion was based was that there were no marks of powder on the head. Although the witnesses had had an opportunity of testifying that this was a case of murder and not suicide, they had had no opportunity of saying that such injuries could be inflicted during life.

DR. P. S. CONNER stated that bullet wounds of the heart are by no means necessarily fatal, since he had put on record ten years ago, a case in which a bullet had passed through three cavities of the heart, and the subject, a boy, had lived three years and some months afterward. In order further to demonstrate the possibility of such an occurrence, he had, with the aid of the late Professor Longworth, made a number of experiments, and had found that it is not at all difficult to pass a needle through all four cavities of the heart. The specimen in question was for a long time in the museum of the Medical College of Ohio, but careful search re-

cently had failed to find it. The reality of the case, he said in conclusion, had been called into question, but it was a fact and had been presented, with the specimen, to the Academy of Medicine, and published in the *Lancet* and *Observer*.

DR. A. R. KINLOCH reported a case in which the question was whether it was accidental or suicidal shooting of the head. Upon examination he found the heavy beard of the individual presented no evidences of powder upon superficial examination, but that when examined more closely, a deep furrow was found involving not only the base of the beard, but extending into the skin. This proved that the pistol had been intentionally placed well into the beard before it was fired.

DR. D. W. YANDELL reported several cases of a very similar nature.

DR. T. F. PREWITT narrated two cases. One was that of a man who, after shooting his wife, shot himself through the frontal bone. He never became unconscious, and apparently recovered. He was sent to the penitentiary, and a year later died of abscess of the brain. A few months ago a boy of eight or nine years of age, found a pistol, put it to his head and fired. The bullet passed through the left parietal bone into the skull. A probe demonstrated that it had passed beyond the skull, and a little piece of brain was found in the wound. The boy never lost consciousness, but recovered and is now, apparently, perfectly well.

DR. T. R. VARICK stated that he had a few years ago testified in a case in which a young man was indicted for killing his schoolmate. A young lady, an eye-witness, swore that the two young men grappled and fell, and that the defendant laid his hand on the shoulder of the one killed and with the pistol in his right hand shot and killed him. On the other hand, the defense claimed that the pistol was discharged accidentally in the fall. The question was then raised as to the position in which the parties were at the time the pistol was discharged, and the question of powder marks was an important one. He made some experiments in this regard with sheets of paper. He found that up to a distance of two and a half feet there were marks of powder, increasing in intensity as the distance was shortened. The ball in this case entered the squamous portion of the temporal bone just above the zygoma and lodged in the hemisphere of the brain, having passed from before backward. The ball was so flattened that it could not be made to enter the barrel of the pistol from which it was alleged to have been shot. No powder-marks were discovered on the person of the killed, and the defendant was acquitted.

DR. AGNEW arose to explain that he had had no desire to criticise any person in his reference to the expert testimony, and that he had drawn his conclusions entirely from the evidence as furnished him by the prosecuting attorney.

(*To be continued.*)

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, May 3, 1887.

THE PRESIDENT, C. L. DANA, M.D., IN THE CHAIR.

THE ELECTION OF OFFICERS

for the ensuing year resulted as follows:

President.—C. L. Dana, M.D.

Vice-Presidents.—W. R. Birdsall, M.D., and M. A. Starr, M.D.

Recording Secretary.—G. W. Jacoby, M.D.

Corresponding Secretary.—N. H. Leszinsky, M.D.

Treasurer.—G. M. Hammond, M.D.

Councillors.—E. D. Fisher, M.D., B. Sachs, M.D., L. Weber, M.D., E. C. Seguin, M.D., and G. M. Hammond, M.D.

CEREBRAL TUMOR; PARTIAL REMOVAL.

DR. S. N. LEO read the history of a case of cerebral tumor occurring in a heavy German woman who had, before its appearance, sustained an injury of the skull where the tumor afterward developed. During the growth of the tumor the patient had consulted several well-known physicians, all of whom were of the opinion that an operation should be performed. Some thought it was a wen of the scalp. The symptoms becoming more serious, she finally asked Dr. Leo to perform the operation. Strict antisepsis was observed. As the operation proceeded it was found that the tumor extended within the cranium, involving the dura mater at the longitudinal sinus, and apparently dipping deeply into the brain substance. These facts, in addition to the patient's bad condition from loss of blood, led him to desist from further procedure after cutting off that portion of the tumor external to the cranial vault. He thought the patient would not have lived so long—over a month—had not the operation been performed. Unfortunately an autopsy was not allowed. The tumor was a sarcoma. He added that the patient's condition had been rendered more serious by cardiac disease.

DR. B. SACHS then read a paper entitled

NOTES ON THE CAUSE AND TREATMENT OF FUNCTIONAL INSOMNIA.

(See page 594.)

DR. FISHER thought a very common cause of insomnia is anæmia, and he had seen considerable success in its treatment by cod-liver oil, cream, and articles intended to improve nutrition. In some of the cases ordinary hypnotics had been administered without avail. The patients may have the appearance of being well nourished, while they are really anæmic. The mineral tonics are, as a rule, indicated.

DR. GEORGE B. JACOBY agreed with the author that the cases must be individualized, and thus the cause of the wakefulness might be discovered. He thought that in the majority of cases the cause would be found to lie in the circulation—not always in anæmia, but frequently hyperæmia. Cure the cause and we would cure the sleeplessness. But that which will cure anæmia in one case will not cure it in another. Active and passive exercises, particularly active exercise, are of benefit. For patients who could not go out the muscle-beater is very useful. While he had not much faith in static electricity in the treatment of insomnia, he cited one case in particular in which the physician who applied it for another purpose to one of his patients, himself became sleepy under its influence. Perhaps the production of ozone by the instrument was the cause of this sleepiness, for it is well known that when one goes into an atmosphere of ozone he is likely to become sleepy.

DR. V. P. GIBNEY had noticed that static electricity tends to produce the sleepy state. It was one of the

few things they had found static electricity good for at the hospital with which he was formerly connected.

DR. W. R. BIRDSALL thought, as did Dr. Sachs, that we must adopt hygienic rather than purely medicinal measures for the cure of insomnia. But we are occasionally forced, as the author had said, to resort to some drug for temporary relief. For this purpose he had obtained benefit without injurious effects, such as sometimes come from bromine, hydrate of chloral, etc., from a drug first recommended to him by Dr. Seguin, namely conium. This given in large doses, fifteen or twenty drops, or more, of the fluid extract, had in his hands been beneficial. He had continued its use two or three months without deleterious results.

DR. G. M. HAMMOND thought fully eighty per cent. of all his patients were similar to those described in the paper by Dr. Sachs. In the large majority of persons suffering from insomnia, mental anxiety, etc., he thought it due to hyperæmia of more or less limited areas of the brain. When the patients do sleep they have unpleasant dreams. They are also frequently sufferers from dyspepsia, constipation, spots before the eyes, noises in the ears, sometimes hallucinations connected with various senses, and coldness of the extremities. It is rare for such patients to go away without being cured, but if they subject themselves to the same causes the condition returns. He used bromides, and stuck to them right through the disease. He gave only ten or fifteen grains three times a day, and also gave fluid extract of ergot. He applied static electricity and dry cups to the back of the neck, and regulated the sleeping hours.

DR. LESZINSKY was rather surprised, in view of a recent discussion before the Society, to hear Dr. Sachs speak of the use of hyoscyamin as a hypnotic. It is a mistake to rely upon large doses of bromides given at night. There is an objection to their use in ladies because of the bad odor which they give the breath. He had not been able to discover any peculiarity in the circulation of the retina in these cases.

DR. L. WEBER said that since he had adopted the treatment recommended by Dr. W. A. Hammond, and just described by Dr. G. M. Hammond, he had obtained the best results in suitable cases for this mode of treatment; but in other cases the bromides may cause excitement instead of aiding sleep. When there is gastrointestinal disorder he adds to the treatment calomel with benefit.

DR. LESZINSKY referred to a remark by Dr. Birdsall concerning the use of a mustard sinapis, or other cutaneous irritant, and said that Dr. W. H. Thomson had called attention to the beneficial effects of cayenne pepper, etc., to the surface of the body some years ago.

The PRESIDENT had found the warm bath a very valuable measure in many cases; in mild cases of insomnia the cold douche down the back and massage had proven useful. Bence had discovered that ozone has a hypnotic influence. Lupulin had been of benefit in the insomnia of old people; and lavender in some cases in which the stimulus of alcohol or warm food had failed.

DR. SACHS objected to the use of the bromides, particularly in small doses, more than to anything else in the treatment of the class of cases under discussion, namely, those of insomnia in neurasthenic subjects. It is likely to do more harm than good. The testimony at the discussion referred to by Dr. Leszinsky

was not against amorphous hyoscyamin, but against the crystalline form.

The PRESIDENT exhibited

AN APPARATUS FOR THE RELIEF OF WRITER'S CRAMP, called the "Kaligraph" by its inventor, the late Mr. Charles Thurber. It consists of an iron framework to which is attached a series of levers so arranged that by making large characters at one angle the characters are reproduced in ordinary size at the opposite angle. It is, in fact, a kind of reversed pantograph. Dr. Dana said that all writer's cramp instruments are based on the principle of resting the groups of muscles most used and throwing the work upon other groups. The kaligraph fulfills these indications better than any other instrument with which he is familiar. The objections to it are that it is cumbersome and expensive. The speaker showed cuts of all the various forms of instruments for writer's cramp (ten in all) which he had been able to collect. The kaligraph has been in practical use for thirty years, but it is very little known. It enabled its inventor, who suffered extremely from the cramp, to write with comfort. He was informed that Mr. Charles Dickens had possessed and used one.

DR. G. W. JACOBY thought this instrument was only palliative, while Nussbaum's was also curative, and could be carried with one. It compelled the writer to use the adductors.

The PRESIDENT replied that an instrument calling into play any other group of muscles of the hand would cause those to be affected after a time.

DR. BIRDSALL thought that writer's cramp is due to cerebral fatigue rather than muscular fatigue, and that instruments for overcoming it could be of only limited benefit.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, May 11, 1887.

THE VICE-PRESIDENT, E. T. BRUEN, M.D.,
IN THE CHAIR.

DR. S. SOLIS-COHEN reported a case of

ASTHMA TREATED BY BERGEON'S METHOD,

in which immediate relief followed the injection into the intestine of the mixture of carbon dioxide and hydrogen sulphide, as recommended by Bergeon. Having noticed in Morel's paper reports of two cases in which success attended the experiment in one of the Parisian hospitals, and a case presenting itself which offered a fair test, he determined to make the trial.

The patient is a stout married woman, about fifty years of age, of somewhat neurotic temperament, who has for some years been subject to attacks of spasmodic asthma, ordinarily manifesting recurrent paroxysms, lasting ten or twelve days. In the intervals there is neither bronchitis nor dyspnoea. There is no heart lesion. He had seen her in previous attacks, which were relieved by methods with which all are familiar. In one particularly obstinate seizure, the patient was sent to the gas works, and was benefited by inhaling the carburetted vapors there produced. He saw her on the second or third day of the attack, and proposed the injections, but could not obtain consent. Not wishing to complicate the therapeutics too much, in case she

should later accede to the proposal, he simply prescribed, as a palliative for the dyspnoea under which she labored between the paroxysms, quebracho, in twenty drop doses of the fluid extract, repeated hourly or half hourly, according to indications. This, of course, gave great relief, but a paroxysm recurring in the evening, the patient consented to try the injection. Almost immediate relief was experienced. Some dyspnoea persisted, but there was no further paroxysm, and the dyspnoea gradually lessened, finally disappearing within thirty-six hours. After six injections, the latter ones being prophylactic rather than therapeutic, the patient professed herself feeling better than for years, and auscultation revealed only normal breath sounds.

This is, of course, but a single case; yet having a standard of comparison in previous attacks in the same individual, he could, so far as one case is worth anything, confirm Morel's claim that the rectal injection of carbon dioxide and hydrogen sulphide is beneficial in asthma. Which of the two is the active agent, and whether it would be equally efficacious by inhalation are questions which he did not then desire to discuss.

NEW YORK SURGICAL SOCIETY.

Stated Meeting, May 11, 1887.

THE PRESIDENT, CHARLES McBURNEY, M.D.,
IN THE CHAIR.

HERNIA OF THE RIGHT OVARY; SUCCESSFUL REMOVAL OF THE GLAND.

THE PRESIDENT exhibited the specimen, and related the following history:

The patient, aged twenty-eight, stated that she had suffered with a right inguinal hernia since the age of twelve, for which she had worn a truss. The tumor had always been reducible, although at times with difficulty. The reporter examined her for the first time on May 5th, when he found a tumor occupying the right labium; it was semi-fluctuating, painful on pressure, and gave no impulse on coughing. From its upper portion a rounded cord, resembling the spermatic cord in the male, could be traced upward to the internal ring. An attempt to reduce the tumor caused severe pain in the head and nausea. The diagnosis of hernia of the right ovary was made, and two days later the speaker cut down upon the mass and found a hernial sac, which was dissected out and laid open. The appearances presented were those of ordinary congenital hernia; there was a persistent pouch of peritoneum, but no intestine could be found. On its posterior wall at the lower end was a mass one-half inch thick, covered anteriorly with thickened peritoneum. At the lowest portion of the tumor there was a quantity of fluid, in which floated a collapsed sac; at its upper portion there was a distinct constriction, which admitted a fine probe, while above this point there was an ordinary hernial tract.

The mass in the posterior wall of the sac was submitted to Dr. Frank Ferguson, the Curator of St. Luke's Hospital, for microscopical examination, who found in it ovarian stroma. The sac was ligated with strong catgut at the level of the internal ring, and was excised, the patient making a good recovery. The speaker added that he had never before had an opportunity to

examine a case of hernia of the ovary. The anatomical relations of the gland were the same as those of the testis in a case of congenital hernia.

RIGHT INGUINAL HERNIA WITH NON-DESCENT OF THE TESTIS; CASTRATION.

THE PRESIDENT also showed a specimen which he had removed from a patient, whose history was as follows: A boy, aged seventeen, had never seen his right testicle until three months before, when it appeared in the inguinal canal, and gave rise to severe pain. Shortly after a mass of intestine suddenly came down, and was reduced with some difficulty. This accident occurred on several subsequent occasions, the gut escaping beneath the truss which he wore. The last time it was supposed to be strangulated, and an operation was advised. On May 9th he cut down upon the testicle, which was very small, and removed it with the sac in the usual way. The intestine was not seen.

DR. BRIDDON remarked that he had seen but one case of hernia of the ovary, the patient being a prostitute, whose vagina measured only one and a half or two inches in depth, while no uterus could be felt. The external genitals and mammae were well developed. On either side the canal of Nuck contained a small insensitive body, which could be reduced into the abdominal cavity. The woman subsequently married, and her husband probably never knew that she was not perfectly formed.

DR. YALE asked if this case might not have been one of hypospadias.

DR. BRIDDON replied that the breasts were large and the external genitals normal, although not prominent, while the woman presented decided feminine characteristics.

THE PRESIDENT said, in reply to a question by Dr. Briddon, that there was in the first case the same condition as existed in congenital hernia, the peritoneal pouch remaining open, while the ovary had prolapsed behind the pouch. It was impossible to say how long the ovary had been displaced; the hernia had existed for over fourteen years.

OBSTINATE HEMORRHAGE AFTER TONSILLOMOTOMY; RECOVERY AFTER LIGATION OF THE COMMON CAROTID ARTERY AND TRANSFUSION OF SALT SOLUTION.

DR. SANDS narrated a case of secondary hemorrhage after removal of the tonsils: Thirteen days ago he was called in consultation by Dr. Speir, of Brooklyn, who requested him to bring his apparatus for transfusion. He arrived at the patient's residence at three o'clock in the afternoon, and found a young man, twenty-four years of age, who had, on the previous day, visited Dr. Fuller's office at 4 P.M., and had both tonsils excised with a tonsil-guillotine. The hemorrhage following the operation was insignificant. The patient returned home, dined, and in the evening went to a wedding, at which he was to act as an usher. While there he began to bleed, and was obliged to return home. The hemorrhage continued all night in spite of the efforts made to control it, by pressure with the fingers, large dressing forceps, and styptic cotton. The bleeding was confined to the right side.

The following morning Dr. Speir was called. He found the patient greatly prostrated and still bleeding.

He tied the right common carotid artery, but the hemorrhage continued, and transfusion was thought of as a last resort. When the speaker saw the patient the latter was extremely weak, could scarcely speak, and his pulse was small and rapid, at times almost imperceptible. Blood was slowly oozing from his mouth. On examining his throat no bleeding point could be detected, but only oozing from the right tonsil, which ceased after the clots had been scraped away with the finger, perhaps because a better surface was thus afforded for the deposit of coagulum.

The speaker opened a vein in the arm and introduced a pint of saline solution in the course of four or five minutes, using a Colin's apparatus, with which any entrance of air is prevented. During the operation the volume and tension of the pulse improved considerably. Dr. Sands had been informed that the patient's subsequent progress was favorable, and that he was now convalescent. How far the transfusion contributed to this fortunate result he was unable to say, but it may have assisted the recovery by increasing the amount of fluid in the bloodvessels.

It had been learned after the removal of the tonsils that the patient belonged to a family of bleeders, and that he had once before bled profusely after the removal of a tooth. Dr. Sands did not believe that this explanation was satisfactory in the present instance; for if the theory of the hemorrhagic diathesis had been correct, there should have been bleeding from both tonsils, and also from the wound made during ligation of the carotid. The hemorrhage was probably due to the division of a large tonsillar artery. He added that this was the only case of the kind he had seen. He had seen very few "bleeders," among whom was an orderly in Roosevelt Hospital, who bled for several days after removal of a tooth, but eventually recovered. A lady, whom he had seen in consultation several years before, had lost a large quantity of blood after having a tooth extracted; pressure was of no avail in this instance.

DR. BRIDDON said that he had observed a fatal case of hemorrhage in an infant under one year of age, after lancing of the gums, the child not being a bleeder. He had seen two bleeders in whom hemorrhage continued for five or six days, but was not fatal; one patient had purpura rheumatica.

He was once called to attend a young man whose inflamed tonsil had been incised three days before. The patient was much prostrated. On examination a small stream of blood was seen spurting from the incision. He inserted into the cavity the bulbous end of a silver tube, in which were a number of small perforations, and injected through it a solution of persulphate of iron, when the bleeding ceased at once. In the case of the bleeders he had tried every remedy in vain; in one instance the patient had a wound in the lip, and on passing a couple of stitches through the latter, the hemorrhage from the needle punctures was equally troublesome. He believed that Dr. Sands was correct in denying the influence of the hemorrhagic diathesis in his case, because if this had been the cause of the bleeding, the patient would also have bled from the wound made in ligating the artery.

THE PRESIDENT thought that the anatomical relations of the divided vessels often exercise a more important influence in cases of persistent hemorrhage than hered-

ity; arteries are sometimes so situated that they can not retract, and hence coagulation is prevented. As an illustration of this he cited the case of a gentleman who had suffered for twelve years with "haemoptysis," and had been all over Europe, frequently having his chest examined under the impression that he had phthisis. No evidence of pulmonary trouble could be discovered, and, as none of his physicians had ever chanced to see him when he was bleeding, the cause of the hemorrhage could not be discovered. He happened to examine him while he was spitting blood, and found that it came from the bottom of a tooth cavity. It was cured by removing the tooth. The patient was not a bleeder.

THE PRESIDENT said that he had seen a case of hemorrhage after tonsillotomy in a medical student whose tonsils were removed with a scalpel at Demilt Dispensary. The operation was performed at 1 P.M. At 4 P.M., when the speaker saw him, he was lying on the floor and was very weak. Persulphate of iron and other remedies had been tried in vain. His throat was examined under a good light, and a small spouting vessel was seen on the right side; the hemorrhage was readily controlled by pressure with a sponge on a long handle. In many cases of epistaxis, the speaker added, we could, on careful examination, find a single bleeding point in one nostril, generally on the septum and near the external orifice, where the mucous membrane is very thin, and could stop the hemorrhage by direct pressure.

DR. RUSHMORE cited the case of a patient in South Brooklyn who belonged to a family of bleeders. He bled for three days from a prick of the thumb; he checked the hemorrhage by elevating the hand on a splint.

NEWS ITEMS.

THE AMERICAN CLIMATOLOGICAL ASSOCIATION will hold its fourth annual meeting at Baltimore, on Tuesday and Wednesday, May 31st and June 1st, in the hall of the New Physical Laboratory of Johns Hopkins University, Monument Street, near Eutaw. Dr. Frank Donaldson, Jr., of Baltimore, is the President for the year. The following programme is announced:

TUESDAY, 2 P.M.—Prophylactic Treatment of those who inherit a Predisposition to Phthisis, by Dr. Frank F. Donaldson, Sr., of Baltimore. The Philosophy of Climatic Treatment of Diseases of the Chest, by Dr. James R. Leaming, of New York. An Analysis of Sixty Cases of Asthma, with the Result of Treatment, by Dr. F. H. Bosworth, of New York. The Influence of Sea Air on Syphilitic Phthisis, by Dr. R. G. Curtin, of Philadelphia. Diseased Conditions for which Sea Air is of Doubtful Benefit, by Dr. Boardman Reed, of Atlantic City. An Invalid's Day in Colorado Springs, by Dr. S. E. Solly, of Colorado Springs.

Evening Session, 8 P.M.—The Causes of Cardiac Failure at High Altitudes, by Dr. Frank Donaldson, Jr., of Baltimore. Some Hospital Cases of Phthisis: Marked Improvement under General Treatment, with special reference to Alimentation, by Dr. Frederick C. Shattuck, of Boston. Discussion of Dr. Shattuck's Paper; introducing the subject of Gaseous Injections in connection with Diet, by Dr. E. T. Bruen, of Philadelphia. The Local Treatment of Diseases of the Res-

piratory Organs, by Dr. B. F. Westbrook, of Brooklyn. The Treatment of the Final Stage of Phthisis, by Dr. John B. Musser, of Philadelphia.

WEDNESDAY, *Morning Session*, 10 A.M.—Observations upon the Sanitary Advantages of Tide-Water, Va., including Virginia Beach, as a Winter Health Resort, by Dr. A. Y. P. Garnett, of Washington. Evergreen Forests as a Therapeutic Agent in Pulmonary Phthisis, by Dr. A. L. Loomis, of New York. Environment in its Relation to the Progress of Bacterial Invasion of Tuberculosis, by Dr. E. L. Trudeau, of Saranac Lake. The Climate of the Sub-Peninsular Pinellas, Florida, by Dr. W. C. Van Bibber, of Baltimore. The Climate of St. Moritz, Upper Engadine, Switzerland, by Dr. Walter Platt, of Baltimore. The Climate of Southern California, by Dr. H. S. Orme, of Los Angeles.

Afternoon Session, 3:30 P.M.—Report of Committee on Mineral Springs, by Dr. Clarence C. Rice, of New York. Classification of American Mineral Waters, by Dr. A. C. Peale, of U. S. Geological Survey. St. Augustine as a Winter Health Resort, by Dr. F. F. Smith, of St. Augustine. Pass Christian, Mississippi, as a Health Resort, by Dr. Charles Le Roux, of Pass Christian.

THE MICHIGAN STATE MEDICAL SOCIETY held its twenty-second annual meeting on May 12th and 13th inst., at Lansing. Thirty papers were read and discussed. The following were elected officers for the ensuing year:

President.—Dr. T. A. McGraw, of Detroit.

Vice-Presidents.—Drs. G. V. Tyler, of Bay City; W. J. Herdman, of Ann Arbor; G. L. Rose, of Decatur; F. J. Gronn, of Big Rapids.

Secretary.—Dr. George Duffield, of Detroit.

Treasurer.—Dr. A. B. Hemenway, of Kalamazoo.

A STRICT QUARANTINE AT NEW ORLEANS AGAINST YELLOW FEVER AND SMALLPOX.—The quarantine system in the Lower Mississippi, initiated by Dr. Joseph Holt, President of the Board of Health of the State of Louisiana, is regarded as eminently fitted to secure all the ends in view, viz., absolute protection against the introduction of yellow fever or smallpox from Cuba and the many West Indian, Central, and South American ports doing business with New Orleans.

Last winter the quarantine wharf, buildings, etc., were destroyed by fire. At once an adjoining wharf was prepared. Improvements were made in securing a fire-proof brick building for the boiler and steam-chest for disinfecting all the effects brought by inward passengers. When a vessel arrives the passengers are sent to the building with all their luggage; the latter is opened, the effects hung upon sliding frames that run into the immense steam-chest, the latter some sixty feet long. They are exposed first to dry heat at a temperature of over 230°. Next live steam direct from the boiler is introduced. They are kept at a temperature of 244° for fully fifteen minutes, a length of time absolutely fatal to all forms of germ life, spores, etc. The goods when taken out are so hot and moist that they cannot be handled. They dry immediately on exposure to the atmosphere. After the luggage has been fumigated, the passengers receive suits of clothing that have been through the disinfecting, germ-killing process, and send the clothing worn on the vessel to be done in its turn.

While the above is going on, the vessel receives the care of a special squad of the quarantine staff. The hatches are put on and ports are closed, and the hold is pumped full of concentrated sulphurous acid vapor, forced in under great pressure. So thorough is its action that, when the hatches are removed, cockroaches, rats, etc., are found dead. The decks, staterooms, etc., are drenched with a solution of mercuric chloride. In short, germs are effectually disposed of and given no opportunity of getting into New Orleans by way of the Mississippi.

All the ports of the Southern States are constantly threatened by yellow fever from Havana and Colon. In both cities it is so common that it excites no remark. Its introduction into the South in 1878, cost 22,000 lives.

THE QUEEN'S PHYSICIANS.—Sir William Gull, being the senior Physician Extraordinary to the Queen, succeeds the late lamented Dr. Wilson Fox as one of the physicians in ordinary. Dr. Reid, who, has been for some years her Majesty's resident medical attendant, has been appointed one of the physicians extraordinary. A contemporary society journal states that Sir William Jenner only attends the Queen when "Her Majesty is really unwell." As a matter of fact, Sir William sleeps at the Castle almost every Saturday night when the court is at Windsor.

DR. MORELL MACKENZIE has been summoned to Berlin to attend the Crown Prince of Germany, who has been suffering from an inflamed growth the size of a lentil, on the vocal cord. The growth has been removed, and Prof. Virchow pronounces it innocent in character. The Crown Prince's general health is reported to be good, nevertheless his condition causes considerable anxiety in the absence of more definite information.

COMPARISON OF THE EYES OF WHITES, NEGROES, AND INDIANS.—At various times and in various places the well-known figures compiled by Cohn, Loring, and Derby concerning defective vision have been published. It has remained for Dr. Flavel B. Tiffany, of Kansas City, to compare the eyes of whites, negroes, and Indians. Of these the largest percentage of defective eyes was found at the Indian school at Lawrence, Kansas, due, in the doctor's opinion, to the prevalence of scrofulous diseases among them. The next largest percentage was among the Irish and Germans in the schools in Kansas City; while he found the negroes to have the most perfect eyes of all those examined.—*The Sanitary News*, April 23, 1887.

ANTIQUE JAPANESE OBSTETRIC INSTRUMENTS.—DR. WHITNEY describes in the *Sei-I-Kwai Journal* of March 1887, the following instruments for use in obstetrics, which are described in the earliest Japanese books: A rather curious instrument called the whalebone sling, was the invention of Kagawa Mitsusada, the grandson of Kagawa Genyetsu. By means of this instrument a cord could be passed over any portion of the foetus, and in some instances, an easy delivery effected. As the results were not infrequently disastrous both to the child and its mother, and, as such instruments were not allowed to be used at all at the court, the son of Mitsusada, Kagawa Mitsustaka, invented a kind of cloth

forceps, which consisted of a wide band of strong linen or silk, attached to two long slender rods, and rolled upon them (as ancient scrolls were rolled). These were introduced within the uterus and unrolled about the head of the foetus, after which the sticks were withdrawn, and a flat vectus-like stick of whalebone, having a small hole for the passage of the ends of the cloth, was passed over them, and into the vagina. The cloth then enveloping the head and passing out through the hole in the vectus afforded a strong hold, and made altogether a powerful instrument.

ASPHYXIA FROM SEWER GAS.—A striking instance of the toxic effects of undiluted sewer gas was furnished last week in Paris, where the *concierge* of a house in the Rue de Temple and his wife, together with their son, narrowly escaped death. In consequence of their non-appearance one morning, their room was broken into by the neighbors, when all three persons were found insensible in their beds. The son was the first to recover consciousness, and the two others ultimately rallied, but remained seriously ill. A search was instituted, which resulted in the discovery of a fissure in the soil-pipe, which passed down behind the wall of their room, the gas from which had, in all probability, given rise to these severe symptoms. A persistent bad odor had been remarked for some time previously, but as this is rather the rule than the exception in houses in Paris other than those inhabited by the very well-to-do, no particular attention had been paid to it. This case shows very clearly the danger incurred by allowing a soil-pipe to pass down within a building—a fact which, notwithstanding its simplicity, does not as yet seem to have dawned upon foreign architects, who, whatever their theoretical knowledge may be, so largely ignore the elementary principles of hygiene in their plans for dwelling-houses.—*British Medical Journal*, April 23, 1887.

REFORM IN ENGLISH SPELLING.—PROFESSOR SKEAT, in a recent number of *Notes and Queries*, says: "Those who know the whole history of our spelling from the eighth century to the present time best understand the harm done by the pernicious system of trying to transplant Latin and Greek symbols into the English language. The symbols *æ* and *œ* are not English, and are best avoided. Indeed, this is done in practice when once a word becomes common. *Ether* and *æthereal* have been sensibly replaced by *ether* and *ethereal*. No one now writes *æternal*. *Solæcism* is now *solecism*, and I trust that *primeval* and *medieval* will soon prevail over *primeval* and *mediaeval*. Pedantic spellings are most objectionable, because they are useless and unphonetic." We heartily agree with Professor Skeat, and trust that *diarrhaæ*, *leucorrhæa*, *dysmenorrhæa*, etc., will soon give place to *diarrhea*, *leucorrhea*, *dysmenorrhea*, etc.

DEATH OF LEON GOSSELIN.—This eminent French surgeon died on April 29th, after a long and painful illness. He succeeded Velpau as Professor of Clinical Surgery in 1867, and succeeded Nélaton in the Academy of Sciences in 1874; he was made President a few months before his death. His writings are numerous and valuable.

NOTES AND QUERIES.

TO DISGUISE THE ODOR OF IODOFORM.

In THE MEDICAL NEWS of April 30th, there was a note on means to disguise the odor of iodoform. After a large experience in the use of iodoform in Jefferson College Hospital and elsewhere I have found the following formula to be very satisfactory and to mask the odor thoroughly:

R.—Balsam, Canadensis,	iodoform	aa $\frac{3}{2}$ j.
	Vaseline	3 vj.

M.—Solve.

If you will kindly print this, others will find it valuable.

ANDREW GRAYDON.

PHILADELPHIA, May 23, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 17 TO MAY 23, 1887.

TAYLOR, MORSE K., *Major and Surgeon*.—Retired from active service May 14, 1887.—*S. O. 111, A. G. O.*, May 14, 1887.

WHITE, R. H.—Promoted to be surgeon with the rank of major, to take effect from May 14, 1887.

ELBREY, F. W., *Captain and Assistant Surgeon*.—Found incapacitated for active service by an Army Retiring Board—sick leave still further extended until further orders on account of disability.—*S. O. 116, A. G. O.*, May 20, 1887.

HALL, JOHN D., *Captain and Assistant Surgeon*.—Granted leave of absence for one month with permission to apply for one month's extension.—*S. O. 74, Dp. Col.*, May 11, 1887.

SUTER, WILLIAM N., appointed assistant surgeon U. S. Army, with the rank of first lieutenant—to rank as from May 16, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 21, 1887.

CURTIS, L. W., *Passed Assistant Surgeon*.—Ordered to the "Quinnebang."

BAKER, J. W., *Passed Assistant Surgeon*.—Ordered to the Hospital, Chelsea, Mass.

PRICE, H. F., *Surgeon*.—Ordered to Board duty, Annapolis, Md.

GRAVAT, C. M., *Surgeon*.—Detachment from "Michigan" revoked.

LUMSDEN, G. P., *Passed Assistant Surgeon*.—Orders to the "Michigan" revoked.

SIEGFRIED, C. A., *Surgeon*.—Ordered to the "Quinnebang."

PERSONS, R. C., *Surgeon*.—Detached from the "Saratoga."

FARWELL, W. G., *Surgeon*.—Ordered to the "Saratoga."

DIXON, W. S., *Surgeon*.—Ordered to special duty, Baltimore.

ROGERS, B. F., *Surgeon*.—Ordered to Marine Rendezvous, New York.

WELLS, HOWARD, *Passed Assistant Surgeon*.—Ordered to the "Jamestown."

WISE, J. C., *Surgeon*.—Detached from the "Jamestown."

HARVEY, H. P., *Surgeon*.—Ordered to the "Iroquois."

WAGGENER, J. R., *Surgeon*.—Detached from the "Iroquois."

WHITE, DR. S. STUART, of Frederick, Md., commissioned Assistant Surgeon in the Navy, May 19th.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDING MAY 21, 1887.

GOLDSBOROUGH, C. B., *Surgeon*.—Leave of absence extended to June first, on account of sickness, May 18, 1887.

GUITERAS, JOHN, *Passed Assistant Surgeon*.—Granted leave of absence for four days, May 21, 1887.

ARMSTRONG, S. F., *Passed Assistant Surgeon*.—To remain in charge of service at Memphis, Tenn., until further orders, May 21, 1887.

LEVANT, S. G., *Passed Assistant Surgeon*.—Leave of absence extended thirty days, May 19, 1887.

CARRINGTON, P. M., *Assistant Surgeon*.—Ordered to U. S. Revenue Steamer "Rush," May 18, 1887.

NORMAN, SEATON, *Assistant Surgeon*.—To proceed to Marine Hospital, Baltimore, Md., for temporary duty, May 20, 1887.

HEATH, F. C., *Assistant Surgeon*.—Granted leave of absence for thirty days, May 18, 1887.

WOODWARD, R. M., *Assistant Surgeon*.—Appointed an Assistant Surgeon May 20, 1887. Assigned to temporary duty at the Marine Hospital, Baltimore, Md., May 21, 1887.